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Original Articles.

NOTES ON SOME CASES OF DIAPHRAGMATIC PLEURISY.[1]

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It has been my fortune to make a number of post-mortem examinations in which diaphragmatic pleurisy has been found present in marked form. In considering the clinical symptomatology, as studied ante-mortem, the results have yielded very varied evidence as to the practicability of recognizing this disease at the bedside. The object of this paper is to briefly state, from the clinical standpoint, the diagnostic features of diaphragmatic pleurisy. The statements I have to offer I have entitled notes, since they have been based on cases which have passed under my observation, without attempting a review of the interesting historical literature of the disease. It is unquestionable that the positive diagnosis of diaphragmatic pleurisy may only be established at the post-mortem table, since the process is often latent, and frequently possesses few distinctive physical signs.

Diaphragmatic pleurisy, as a primitive disease, is certainly infrequent, when traumatic causes are excluded. It is oftener a complication attendant upon acute inflammatory processes in the adjacent pulmonary lobes, the costo-parietal pleura, or in the liver or peritoneum. Inflammation of the diaphragmatic pleura also occurs in some cases of pyæmic inflammation of the serous membranes.

Under the foregoing conditions, invasion of the diaphragmatic pleura may be characterized by special symptoms, which may entitle one to designate this class of cases as acute inflammation of the diaphragmatic pleura.

Inflammation of this portion of the pleura may also be sub-acute or chronic, but developed in consequence of contiguous sub-acute or chronic inflammatory processes, or malignant growths. In such examples, the process in the diaphragmatic pleura may become specialized by symptoms which should lead the clinician to differentiate the diaphragmatic pleurisy from the associated pathological changes.

My notes upon cases manifesting the acute form of this disease would seem to show that, in such cases, many of the more prominent and differential symptoms may be masked by the greater importance of the primary disease. For example, in a case of croupous pneumonia of the apex of the lung, occurring in the Philadelphia Hospital during my present term of service, in which the process advanced through the lobes of the right lung, finally reaching the lower lobe by the end of the fifteenth day of the illness, diaphragmatic pleurisy was developed. The patient was delirious with typhoid state marked; yet the development of the new complication was characterized by pain over the hypochondriac region, extending over the flank to the inferior dorsal region of the right side, by hiccough, and irritation of the phrenic nerves, as shown by tenderness on pressure along their course. The hiccough was not constant, but was aroused by the passage of food into the stomach, or by its presence in that viscus, or accumulation of gas in the abdominal viscera, and was augmented when the patient, by moving, increased the frequency of respiration. Hiccough was sometimes similarly excited, but was always diminished in frequency or subdued by the use of morphia hypodermically, but was not relieved by the anti-spasmodics which are useful when the diaphragmatic irritability is traceable to the central nervous system.

It is stated that in diaphragmatic pleurisy, the position of the sufferer during a paroxysm of pain and dyspnœa corresponds with that observed under like conditions in emphysematous subjects, that is, inclined forward, so as to lessen the diaphragmatic movement. But in this case, as in most instances of diaphragmatic pleurisy in connection with acute types of disease, the position was not characteristic. The post-mortem confirmed the ante-mortem diagnosis.

The symptoms of diaphragmatic pleurisy associated with peri-hepatitis, or inflammatory processes originating in the peritoneum, are very often obscured and rendered inconspicuous by the conditions associated with these processes. For instance, the enlargement of the liver, or the distension of the intestines with gas, may so sensibly modify the freedom of the diaphragmatic movement that the respiration may be costal, and the immobility of the diaphragm, one of the prominent symptoms of diaphragmatic pleurisy, may not be differentiated, and assigned to its true cause.

The symptom of hiccough may be suppressed by similar conditions, while the posture of a patient suffering from diaphragmatic pleurisy is not usually at all characteristic. Very often, however, the characteristic pain over the situation, elsewhere designated, the added disablement of the respiratory function may be noticeable. Friction fremitus between the liver and edge of the ribs should lead one to suspect diaphragmatic pleurisy.

Concurrently with inflammation of the diaphragmatic pleura, friction râles may be audible along the line of union of the diaphragm with the lung. The râles are probably produced in the bronchial tubes in the lung bordering the diaphragm, and are caused by the hypostatic congestion which ensues upon the want of functional play of the lower zone of the chest. The icteroid tint and clay-colored stools may be associated symptoms in diaphragmatic pleurisy, concurrent with perihepatitis. In most of the cases which I have seen, the right side of the diaphragmatic pleura was invaded.

The termination of acute diaphragmatic pleurisy is intertwined with the associated pathological processes, and the gravity of a case is not necessarily increased if the symptom of hiccough is subordinate. In some apparently primary cases, a favorable issue may occur. In support of the foregoing statements, and as a typical example, let me briefly state the pertinent features of the case of X, a negro thirty-one years of age, who entered the Philadelphia Hospital, March 5. On examination, the diaphragm appeared fixed, the liver pushed below its normal position. The organ was also swollen and enlarged. Pain distributed over the diaphragmatic zone and at points elsewhere mentioned as characteristic. Friction râles were distinctly audible along the line of approximation of the visceral with the diaphragmatic pleura. Dyspnœa was marked, with jerky, enfeebled respiratory murmur, especially over lower lobe of the lung, together with slight dulness on percussion. The cardiac action was rapid. Subsequently, disseminated areas of consolidation appeared

[1] Read at the first annual meeting of the Association of American Physicians, at Washington, June 17, 1886.

through the right lung, from apex to base, apparently due to congestion, since the normal physical signs reappeared within a week. Concurrently, an œdematous boss as large as a silver dollar, occupied the anterior axillary line over the right lobe of the liver; one or two other similar swellings appeared over the right inferior axillary region. These bosses were so soft and fluctuating as to lead me to make an exploratory aspiration of the liver. The needle was introduced three times fruitlessly, so far as finding pus, but without injury to the patient. The areas of œdema seemed to me attributable to sudden interference with the circulation through the diaphragmatic and intercostal lymphatic systems, on account of the suspended functional play of the diaphragm and intercostal muscles upon which the circulation of these lymphatics depends. Similar œdema of the intercostal muscles occurs in certain cases of emphysema. There was no hiccough. This case terminated in complete recovery after the expiration of five weeks.

To show, however, that the acute forms of diaphragmatic pleurisy may progress to a marked degree without (even to expectant attention) the manifestation of diagnostic symptoms, I append a recent post-mortem held June 12th, at the Philadelphia Hospital, on a young colored man, aged nineteen. The lesions of acute miliary tuberculosis were found through the right and left lungs, secondary, on clinical ante-mortem evidence, to costo-parietal pleurisy. The right diaphragmatic pleura was found thickened to an inch by the deposit of lymph covering a dense layer of miliary nodules of tubercle, with comparatively little change in the costal pleura. The abdominal aspect of the diaphragm was also covered with miliary nodules, indicating that the extensive tubercular peritonitis which was formed had probably been developed through transferrence of elements from the pleural process through the diaphragmatic lymphatics, by which there is a connective channel between the pleural and peritoneal lymphatics.

During life the diagnosis of the miliary tuberculosis and of the costo-parietal pleurisy was positively established, but the only symptom which suggested involvement of the diaphragmatic pleura was the numerous friction râles heard along the upper border of the fifth rib and near the margin of the seventh rib in axillary line, and this, although it was known that a considerable amount of fluid was contained in the pleural cavity. The râles were doubtless developed by the friction between the diaphragmatic pleura over the convexity of the liver, and the visceral pleura over the concavity of the lower pulmonary lobe. The lung itself rendered hard and inelastic by the tubercular infiltration, projected in rigid immovable form into the pleural cavity, displacing the effusion around it.

As already indicated in the outset, the sub-acute or chronic forms of diaphragmatic pleurisy, although combined with other lesions, impart certain conspicuous characters to the symptoms, which are less obscured by the intercurrent disease than in many cases of the acute forms of the disease. The following case may be appealed to as reasonably typical: J. G., aged forty-four, admitted to Philadelphia Hospital 8.12.1885. Dates his illness to a cold two years ago, and has had cough ever since. When examined, the usual physical signs revealed fairly marked emphysema, with indurative consolidation of the right apex. It was noted, however, that the liver was displaced downward three inches from the eighth rib in the axillary region, the dulness in the nipple line extended two inches on line with inferior margin of ribs. A localized spot of tenderness was found two and one-half inches from the edge of ribs near a line prolonged from the inner border of the sternum, resembling the *button diaphragmatique*) of De Mussy. Tenderness was felt in the lower intercostal spaces behind, near the spine, and also along the course of the phrenic nerves, near the borders of the sternum, and especially under the lower insertion of the sterno-cleido mastoid muscle. The attitude of the patient was always inclined forward, especially during attacks of pain, which came on paroxysmally several times daily, notably when food was taken. Sometimes exudations of gas occurred during a paroxysm of pain, which seemed to give relief. The most conspicuous feature was fixation of the diaphragm, which occasioned superficial shallow breathing. The respiration was mostly costal and limited to the upper part of the chest. Inspection showed retraction of the hypochondriac and epigastric regions, and also of the interspaces between the lower ribs to a greater degree than could be accounted for by the emphysema. It was held that the diaphragmatic pleurisy had been secondary to costo-parietal pleurisy, the characteristic symptoms separating the diaphragmatic disease from the associated emphysema, being the posture, the fixation of the diaphragm, the areas of tenderness, the paroxysmal pain. The retraction of the epigastic and hypochondriac regions was due to the forward inclination of the person, assumed to lessen the play of the diaphragm, and facilitate superior costal respiration. It was necessary, in this case, to exclude from the clinical picture gastric ulcer, since the tenderness over the epigastrium was very local; circumscribed peritonitis, and gall-stone, (the latter suggested by the icteroid tint which was always more marked after a paroxysm of pain), were also set aside by appropriate methods. The post-mortem in this case confirmed the diagnosis. On both sides the diaphragmatic pleura was thickened and adherent to the pulmonary lobes. The lungs were emphysematous with induration of the right upper lobe. There were adhesions over the axillary region between the costo-parietal and visceral layers of the pleura on the right side. Phrenic nerves apparently normal.

One must be prepared for wide variations in the symptoms of this interesting disease, for the power of adaptation possessed by the system is very great, as we can see illustrated by the long period during which an adherent pericardial sac can be tolerated. Moreover, even deficiency of diaphragmatic structure may occur without marked symptoms. In a case reported to the Philadelphia County Medical Society by the writer, very great thickening to the extent of three inches occurred in the entire pleura of the left lung. Between the first and fourth ribs, near the sternum, the costal cartilages had been bulged outward over the area of thickened pleura. The lungs upon the left side were infiltrated by desquamative pneumonic processes with cavities. The muscular tissue of the diaphragm was entirely absent, as was also the pericardial tissue. These latter changes were doubtless congenital. The liver was folded upon itself, and drawn up into the chest cavity as high as the second rib at its outer portion. The absence of the pericardium permitted the heart to yield to the traction of the pleural adhesions, and the apex was tilted upward and to the

left, so that during life the apex pulsation was felt in the fourth interspace four and one-half inches from the left border of the sternum. The patient dated his symptoms to a period eight years prior to his death. He complained especially of pain in and around the chest, with shortness of breath accompanied with asthmatic attacks. The patient was thirty-two years old at death, consequently as the first twenty-four years of his life had been free from distress, it was reasonable to ascribe the above symptoms to the onset of the pleurisy.[2]

In a case very fully reported by Tyson,[3] the diaphragmatic pleura of the right side was covered with gray granulations, and thickened, as was also the costal surface of the right pleura, and yet none of the so-called diagnostic symptoms of diaphragmatic pleurisy had been recorded. But in a case of intra-thoracic cancer, involving pleura, diaphragm and chest-walls, reported by Pepper,[4] I would call attention to certain symptoms. "Marked pleural effusion on right side, with violent orthopnœa. The physical signs were localized chest pain, absence of respiratory sounds and dulness on the right side. These signs gradually diminished, and in a month the patient was much better. There was return of resonance, diminution in pain, and much improvement in general health. During the whole period of the patient's illness there was marked disturbance of the liver, with heavily coated tongue and torpid bowels. The effusion returned in about two months with the orthopnœa. There then appeared for the first time distinct prominences upon the chest walls, with severe pain. The first prominence appeared over the ninth rib posteriorily four inches from the spine. The second appeared below the sternal end of the right clavicle, the third on the right side in the line of the arm-pit, about the tenth rib. . . . Sleep was disturbed by the intense pain, which was constant, but also increased paroxysmally. The pain was most felt at the points of prominence, but also extended down the nerves of the right arm."

The post-mortem record showed the tumor mass on the posterior surface was very large and extensive, and involved both layers of the pleura and also the superficial layer of lung tissue at a few points. It reached from the third rib down to the diaphragm and was fully an inch thick in some places. The mass low down on the right side was smaller, also involved both layers of the pleura and was continuous with a large growth which involved the whole thickness of the diaphragm. The anterior part of this muscle was chiefly affected: the growth in places was fully one-half to two inches in thickness, and the disease extended across the median line where it was continuous with the mediastinal growth before described. At one spot over the convexity of the liver, there was an extension of cancerous disease to the capsule and superficial layer of the tissue of that organ. There was no pleural effusion, though during life small amounts of fluid had from time to time been withdrawn by aspiration. The tender spots, while directly traceable to the growths, yet occupied the characteristic situations of tenderness indicative of diaphragmatic disease. Again, Dr. Daland of Philadelphia, has related to me the notes of a case occurring in a woman, under his care, who died from cancer of the breast, in whom, on post-mortem, the right lung was found completely adherent to the diaphragm by a union which must have seriously crippled the expansion and contraction of that lobe, and indeed that side, and yet she presented no symptoms of pulmonary embarrassment by which the lesion could have been suspected.

The diagnosis of a disease in which there is often so little that is distinctive, must necessarily be a difficult problem. I have shown by the relation of several post-mortem examinations that this process can exist in advanced form on one side of the diaphragm at least without special symptoms. If the diaphragmatic pleurisy should complicate any form of pulmonary disablement, or pathological process in the liver, or circumscribed peritonitis of the superior part of the abdominal cavity, one may note that the subjective sense of respiratory distress, and the objective symptoms are disproportionate to these conditions, and therefore the possibility of the existence of diaphragmatic pleurisy should be considered.

The more important diagnostic symptoms which, if present, indicate diaphragmatic pleurisy may be ranged in the order of their frequency and importance, as follows: subjective sensation of pain over the zone which borders the diaphragmatic plane, pain on pressure at the *button diaphragmatic* of De Mussy, namely,[5] one or two fingers' breadth from the middle line on a level with the tenth rib, or at the intersection of a line drawn from the osseous part of the tenth rib and one drawn along the border of the sternum. De Mussy explains the greater pain at this point by the greater play of the ribs and consequent friction against the inflammed nerve. Whether the nerve is actually inflammed, or simply irritated, must as yet await investigation by further post-mortem examinations. The pains may be constant, yet also paroxysmal, or evoked by pressure, by increased respiratory motion, by irritation of the diaphragm, by swallowing, or vomiting, or by the pressure of the distended abdominal viscera. Radiating pains around the chest and upper abdominal zone may occur. Fixation of the diaphragm is an equally important symptom, and secondarily, the enforced thoracic character of the respiration is a very striking phenomena. There will usually be feeble, or absent respiratory murmur near the diaphragmatic zone.

Dry or moist friction râles may be audible along the convex surface of the diaphragmatic pleura. The percussion resonance may be dull when there is much exudation, but more commonly I have found it tympanitic, since the partial paresis of the diaphragmatic muscle permits the pressure of the abdominal viscera to raise it somewhat above its usual area. In certain cases the posture of the patient may be bent forwards with retraction of the hypochondriac region and epigastric hollowness, but the dorsal decubitus is very often maintained. The respirations are quickened in acute cases, so that there may be dyspnœa, or orthopnœa, but these symptoms may be almost entirely absent in sub-acute or chronic cases on account of compensatory costal respiration. Cough is a variable symptom, and the same may be said of hiccough; both are very often absent. Finally, in the writer's experience, diaphragmatic pleurisy has been chiefly a thickening with adhesions rather than accompanied by much fluid exudation. Hence the importance of noting the foregoing symptoms since the presence of much fluid exudation would

[2] See Trans. Phila. County Med. Soc., Vol. 5, p. 111.
[3] See Trans. Path. Soc., Phila., Vol. 5, p. 122.
[4] Trans. Path. Soc., Phila., Vol. 7, p. 71.
[5] Arch. Gen. de Med., 1853, vol. 2, p. 274.

be much more obvious, by means of percussion, auscultation and other physical signs.

Aside from any discussion of the differential diagnosis as separating diaphragmatic pleurisy from costo-parietal pleurisy, or processes in the lower pulmonary lobes, or in the pericardium; and aside from a discussion of the differential symptoms separating the disease under discussion from perihepatitis, or circumscribed peritonitis in the upper part of the abdominal cavity, one must consider in certain cases the diagnosis by exclusion of gastric ulcer, and this particularly if the *button diaphragmatique* should be manifest. Multiple ulcers of the stomach may advance without symptoms quite to the period of perforation into the peritoneal cavity, but the pain in certain other cases of this disorder has a wide distribution radiating to the back and along the shoulders. In gastric ulcer the symptoms may be aggravated by the ingestion of food, and vomiting may follow. In diaphragmatic pleurisy the ingestion of food may cause pain by the distension of the stomach, which will induce pressure against the diaphragm; with this there may be coughing, and even vomiting. The differential diagnosis may only be settled after a rigid analysis of the etiological relations of the array of symptoms. In some cases the paroxysmal character of the pain, the icteroid tint may suggest gall stone, especially if there is also localized peritonitis around the duct. Circumscribed peritonitis or peritonitis of the tubercular variety may exist and it may be quite impossible to differentiate the processes. Pain, dyspnœa, hiccough, and vomiting may be common to both conditions, and moreover, both conditions may be intertwined.

Rheumatism of the diaphragm is recognizable by its relation with the rheumatic diathesis; pain on respiratory effort may be acute and is felt over the diaphragmatic zone, and at the insertions of the muscle. In chronic pericarditis the symptoms may resemble diaphragmatic pleurisy, especially by the symptoms of dyspnœa and pain, over the costo-ziphoid region. I need not, however, develop the physical signs which should enable one in most cases to decide the existence of the former affection, but when the diaphragmatic pleura on the left side is concurrently affected, the differential diagnosis may be very difficult, or impossible.

The prognosis of diaphragmatique pleurisy is intertwined with the intercurrent pathological process, and in its acute forms has already been discussed. When the process is sub-acute or chronic, although adhesions may form, the powers of adaptation possessed by the pulmonary system are so great that the duration even of double diaphragmatic pleurisy may be indefinite. The most serious symptom in my experience is hiccough, which is especially uncontrollable in this relation.

REPORT OF A CASE OF EPILEPSY OF FORTY-FIVE YEARS' DURATION, WITH AUTOPSY.[1]

BY WALTER CHANNING, M.D.

THE patient, a female eighty-one years of age, died in February of the present year (1886). She was small in statue, of wiry, active build, and capable of enduring considerable physical strain. In old age she was lithe and active as a child, and possessed the characteristic of her family — of retaining the natural color of her hair, with few gray hairs, up to the day of death. She belonged to a long-lived family, a sister living to upwards of ninety-five, and another relative to over one hundred. She inherited no insanity, but some members of the family were nervous, impulsive, and quick-tempered. She was herself rather quick and impulsive in her feelings, and had such unusual ways of doing things that she was sometimes called eccentric.

She was married, had one child, and was in fair general health up to 1841, when she sustained a severe injury by being thrown from a carriage on to a stone wall, striking on her forehead. The point struck was in the middle of the forehead, about an inch above the supra-orbital arches, and exactly in the median line. An indistinct cicatrix at the point described has always been apparent on near inspection. It was round, and about the size of a half dollar. A relative states that the attending physician performed the operation of trepanning, or trephining, and the circular shape of the cicatrix, both of the scalp and skull, would seem to bear out the assertion that the latter operation might have been done. A later medical attendant says that he never heard of it, but the probabilities are that it was performed.

The accident was followed by symptoms of concussion, and for several weeks the patient was unconscious and delirious. She slowly recovered from the accident, not regaining her former physical strength. Up to the year 1859 she continued in fair health mentally and physically, though growing more peculiar and eccentric. During these twenty years she passed through the change of life.

In 1859 she had the first attack of *grand mal* now known to the friends. That she had previously been subject to seizure of nocturnal epilepsy in the form of *petit mal*, the statements of some observers and the change in her condition furnish strong presumptive evidence. The attack of 1859 was characteristic. Others occurring soon after made it necessary to have her always in the company of some one else, in order that no accident might occur. These attacks were accompanied or followed by slight local paralysis, and the mouth became permanently drawn to the right side. Mental irritability also began to develop, accompanied sometimes by excitement, and later by delusive ideas and violence.

She finally became unmanageable at home, and in 1867 she was taken to the McLean Asylum. The record book of the Asylum refers to the accident, and says that "sight was lost for some time after the accident. After she could read, the slightest pressure on the base of either eye made her blind. There was also paralysis of the auditory nerves, hearing returning first in one ear, then in the other. Speech was also impaired. She had been having the epileptic seizures for six years, and her general health had been poor. Sometimes she would have several during the twenty-four hours, then none for several days. Brown-Séquard had treated her, and for the year previous to admission, she had had no fits, but the general and mental condition had grown poorer. At admission seemed very feeble; speech was a little affected, there being a slight clipping of some words; the memory was weak; she had been excited at home, and turned against those about her." She remained at the asylum four months. During this time, she took forty grains of bromide of potass three times daily, and had only

[1] Read March 18, 1886, before the Boston Medico-Psychological Society.

one fit. She was discharged as practically recovered so far as the attack of mental trouble was concerned.

From the time of her discharge to the summer of 1871, she was well enough to be at home, though having occasional attacks. In September of that year she was seized with a succession of epileptic convulsions, which followed each other in rapid succession to the number of twenty-five. After these she was excited and violent, and was kept for three days in a camisole. She turned against her husband, accusing him of being in league with the servants to poison her. She was then sent to the asylum at her own request, remaining nearly two months. She took one hundred and twenty grains of the bromide of potass daily, and had only two epileptic seizures. She was quite comfortable when discharged.

In 1875 she again had numerous attacks of *petit mal*, which had occasionally shown themselves since her last discharge. Becoming violent and unmanageable, she was again admitted to the McLean Asylum in a more excited condition than at any previous time. She soon became quiet, but had seizures of *petit mal* at frequent intervals, combined with irritability and various insane ideas. She now began to make many and extraordinary demands, such as having an aurist, oculist, hair-dresser, chiropodist, female physician, etc., summoned immediately, and was extremely angry because her wishes were not immediately complied with. In the spring of 1876 she was discharged, being at that time somewhat better.

She was again admitted to the McLean Asylum in the summer of 1877 in about the same condition as at the last time, except that she was perhaps more violent, being brought to the asylum bound to an iron bedstead. She remained at the asylum until January, 1879, having periodical attacks of *grand* and *petit mal*, and growing mentally rather more feeble.

At this time she came under my care. On admission I made the note: "Her history points to attacks of nocturnal epilepsy, alternating with day attacks; reduced in flesh; complexion bad; pulse weak, 80; quite bright in conversation; memory fair; says she is very poor, and must save carefully; picks up threads wherever she sees them; wishes to do her washing, mix various strange drinks, etc." At that time mouth was drawn to the right side; there was no impediment in her speech; sight was good; heard well on the left side, not so well on the other side; walked naturally; face marked with numerous scars received probably in past epileptic seizures.

A few days after admission, a severe maniacal attack developed, following an attack of nocturnal epilepsy. She slept none at all at night; had on almost no clothing; kept on her feet constantly, and occupied her time in washing, dressing, greasing her furniture, tearing her clothing, etc. This attack lasted two weeks, and was followed by a period of comparative quiet, in which she drove out daily, took her meals at the table, etc. At this time (February, 1879), I made this note: "To-day, while talking, eyes became fixed; this was quickly followed by unconsciousness and slight convulsion (a tremor more properly), the latter lasting half a minute. For an hour after this seizure actions were peculiar and unnatural. After this time tired, but as well as before the attack."

In May, 1879, I made the note: "Attacks of *petit mal* average once or twice a week, and occur about one-fourth of times at night."

July, 1879, I entered in my record book: "Since the last report, has been through the usual states of excitement, depression, quiet and irritability. This morning had one of her seizures of *petit mal*, followed by mental confusion. She now (9 A.M.) shows no indication of such an attack, and, as is often the case, is brighter and apparently better after than before the seizure."

In August she was not so well again, and I wrote: "As usual in her excited state, makes a great variety of requests, and is with difficulty restrained from carrying out her wild projects. To-day she wishes to go to Hovey's and Pierce's to buy a great variety of presents; she wants mucilage, a box of cologne, ammonia for furniture polish, locks of various persons' hair to make ball ear-rings, currants to make currant jelly for her own house, perfumes of different kinds, patent medicines, etc. Must go to the tin-smith's, carpenter's and other places."

In September she was much depressed, sitting most of the time quiet and listless in her own room.

In October she had much improved. Took a natural interest in her surroundings, drove and walked daily, called on her friends, and appeared almost well.

In November, she had passed again into a state of excitement. At that time she intended to get up a national fair, for which she had arranged an elaborate programme, and she gave me a list of twenty articles to buy. She had also prepared a mixture of water, figs, sugar-wine, and cuticura soap, which she said she drank with great benefit herself, and insisted on all persons taking.

She had at this time an attack of *grand mal*, but it seemed to have no connection with the general excitement.

November 22d, I made this note: "Has continued to grow more excited since last report. She will talk somewhat as follows: Has thirteen questions to ask as there are thirteen States; has put water into bottle of salt three times three because she was married in '33; has put ammonia into vessels with finely cut-up hairs to dissolve them; has bought four kinds of perfumes, one drop of each she proposes to put into rockers of her chair; wants poetry she has composed arranged to the best music, and have it sung publicly, and with the proceeds help her fair; wants four paper-weights bought and given to four prominent poets, one monster weight for the State-house; wants handsome pedometer bought for each State in the country; wants her brother's watch exhibited; wants to see the carpenter, plumber, baker, caterer, her old servants and numerous other people; wants her carriage repaired, and will present $5.00 to each person who works on it.

The next day she said she would write a book equal to the Bible, from an inspiration she had the night before; was soaking her teeth in spring-water, spitting everything sweet into one vessel and everything bitter into another.

On the fifth of December following, she had a severe attack of *grand mal*, left side was almost motionless, then severely convulsed, convulsions extending to the entire body; left eye closed as she came out of attack; speech for half an hour after consciousness returned, indistinct; would constantly repeat the same words.

This attack was the worst one she had had up to that date.

In the course of two weeks she again became quiet and rational.

It should be stated that the sense of smell and taste seemed to be almost, if not entirely absent. This fact I did not discover until she had been under my care for some time. Her mouth was usually dry, and she often said she could never shed tears, which was a fact, as I never knew her to shed a tear in six years under my care.

In looking back over the year 1879, the patient's mental condition seemed to have presented many of the characteristics of *folie circulaire*, the periods of excitement and depression being very marked, and the latter followed usually by a period of comparative lucidity, and mental stability; each period was, to be sure, quite short, and in that respect differing from *folie circulaire*.

A remarkable feature of the case, was the accompanying epileptic phenomena, which sometimes produced mental perturbation, but not at all at other times.

I do not mean to say that all the symptoms of mental instability were not dependent on epileptic discharges, but as observed externally, they took the form of *folie circulaire*.

The years 1880 and 1881 were not particularly eventful, the number of epileptic seizures averaging about the same. The patient's mind weakened a little, but so very little that it was hardly noticeable.

There were in these years more severe attacks of *grand mal*. The periods of excitement were about the same; the quiet periods of longer duration.

All this time her general health was excellent; her appetite was good, and when at her best it was not easy to see that the strain of repeated epileptic attacks had affected her general condition. Very frequently she would say that she had never had a headache in her life, and could not imagine how it would feel to have a pain in her head.

In 1882 I noticed a change in the character of the maniacal attacks; instead of a prolonged period of excitement followed by depression, there was now a change on alternate days. In September, 1883, I wrote: "She is now emerging from a condition of alternate mania and melancholia occurring on alternate days. The symptoms of each form of disease are perfectly typical. One day she gives away everything, and is about to die; the next day there is the excitement and incoherent language of acute mania, with destruction of clothing, drinking of urine, etc."

The next record of interest was in February, 1883, up to which time she had improved. The alternating character of the disease grew less marked, and after several attacks of *petit mal* on January 11th, followed by great violence, she daily grew more rational.

In February I wrote: "Very rarely knows about epileptic seizures, but knew one was coming two nights ago; she says her vision was first affected, she saw a small rain-bow, which increased in size and seemed very beautiful, then this disappeared, and she felt a peculiar sensation in her abdomen in the region of the left ovary, which gradually grew higher and higher."

In May, 1883, I wrote: "Has been depressed and excited on alternate days. Slept very poorly every other night, and more irritable on excited days. Increased violence characterizes her advancing age. Has about two attacks of *petit mal* weekly, usually at night." Later in this month she had a severe seizure of *grand mal* preceded by several of *petit mal*. On coming out of the attack the right side was found to be motionless, with mouth drawn to the left and left eye closed; could not speak for several hours and then incoherently. The paralysis began to pass off in two days and was entirely gone in five days. Hallucinations of sight were marked at this time, though her mind was quite clear.

For three months following she was comparatively comfortable; then the alternating attacks began. In December, 1883, I wrote: "She is one day bright, active and quite rational, and the next stupid, depressed and inclined to think she will die immediately. On the bright day her appetite has been good, and on the depressed day poor. The night of the depressed day good; the night of the excited day not so good."

At this time she described the pre-epileptic aura, as "a face in a star, with one bright and one dull eye. The bright eye has numerous bright rays of light, like eye-lashes projecting from it." After this vision comes, as described before, a pain in the epigastric region.

In April, 1884, after a period of alternating insanity in February, and comparatively good health in March, she had an epileptic seizure followed by a temporary paralysis of the left side. She used meaningless words, generally misplaced, for some days after this attack.

In September of the same year, I wrote: "Since the above record, has had a variety of epileptic seizures, both *grand* and *petit mal*, and by day and night. Her memory and general intelligence have weakened considerably. She now lives much in the past, and often mistakes those about her for old friends. The right side is usually principally affected during a seizure, and her power of clear articulation has been permanently impaired. She finds it difficult to select the right word, and is much irritated if not understood. She has occasional days of great irritability and violence, when she savagely attacks her nurse."

October and November following were months of comparative calm, and she was able to go to her meals, and drive, and walk a little, though her mind was weakened, as above recorded.

In December she was again violent. She attacked and pounded her nurse, seized her by the hair, tearing it out in handfuls, and was very furious. She had only six characteristic epileptic seizures during the month, though numerous attacks of violence, suspiciousness, depression, and cheerfulness. Her condition was very unstable, changing almost from one hour to another.

During the year 1885, the tendency was very slowly, but steadily downward. She was then in her eighty-first year, and the weakness, or lack of rallying power of advanced age, began to show itself. The number of epileptic and violent attacks were also greatly increased over any previous year, and tended to further reduce her strength.

In January, after an attack of *petit mal*, she saw and talked to an imaginary dog, heard him growl and was afraid of him. The same day she was violent and attempted to bite, and bit her own hands. She seemed to think she was a dog herself, and later during the year, when much excited, she imitated the actions and noises of animals, principally dogs.

She also began to make imaginary letters and write

during this month, sometimes for an hour at a time, slowly going through the motions, dotting the i's, crossing the t's, and so forth.

On the 13th of January, there was cataleptic contraction of the arms. She would bend them at the elbow upward, and keep them bent until they were put down, then she would slowly raise them again.

On the 14th of January she saw a lion, and was afraid of him. She also made the motions of writing, and tried to spell the words. At this time she could not speak clearly, and some days had difficulty in walking.

On the 17th, she had an attack of *petit mal;* when she saw a dog, was very violent and called "murder."

She had a severe seizure of *grand mal* on the 27th, and thought she saw a bear. The next day another seizure occurred, when she saw a long dog, and tried to keep her feet away from it.

On the 30th, there were thirteen seizures, ten occurring in an hour and a half. Of these, two were severe *grand mal* seizures. On the 31st, there were one *grand mal*, and one *petit mal* seizure.

During the month of January, she had, altogether, twenty-three epileptic seizures, not including four severe attacks of violence, which were probably also due to epileptic discharges. There were not more than four quiet days. Nights were fairly good. No two days were alike. At different times in the same day, she was quiet, drowsy, depressed, irritable, suspicious, excited, and violent.

In February, between two seizures, thought she saw a black cat. She was not afraid of it, and tried to purr like a cat. During this month she had six epileptic seizures, and eight attacks of violence. The latter were only once near the time of an epileptic seizure, and then just before. They seemed to take the place of the epileptic seizures. There was more depression during this month, and more good days.

During March, there were three attacks of violence and thirteen epileptic seizures. About one-fourth of the days were quiet, and as natural as could be expected, with the gradual loss of mental power. One day she saw a dog behind a fence, and she tried to catch and pound him. The general character of the month was like that of February.

In April, there were three attacks of violence, and ten epileptic seizures. Most of the days she was drowsy, suspicious, or irritable. Speech was growing more confused, and she realized little that was going on around her. She walked with more difficulty than before.

In May, four attacks of violence and ten epileptic seizures. The month was about like April.

During June, there were seven attacks of violence and seven epileptic seizures, several of the latter being severe. After one of them, she talked about a cow jumping over a fence. Her mind was now quite feeble; she lived almost entirely in the past, her conversation referring to her own home and family.

July was an unusually good month, as she got out to drive on thirteen different days. She saw a gray mare during this month, and did some imaginary writing. She had two attacks of violence and six epileptic seizures.

August was a trying month with her, as she had sixteen epileptic seizures, many of them severe, and two attacks of violence. When excited, she would often bite, and scratch like an animal during this month.

In September, there were seven epileptic seizures, most of them severe, and two attacks of violence.

In October, there were three attacks of violence and twelve epileptic seizures. Most of this month, when quiet, she was in a dazed or drowsy condition. She was settling into this state more and more as time went on, and only roused partially from it. She was less noisy in her violence, and, on the whole, less violent.

During November there were five attacks of violence, and nine epileptic seizures, none of the latter of unusual severity. She was less dazed this month, and went to drive several times. She was unable to walk without assistance, and the right side was weaker than the left, and becoming more so. Her food she began to swallow with difficulty. She had bitten and growled like an animal several times, when excited, during the month.

In December there were no attacks of violence, and eleven epileptic seizures, two of these being severe. She had grown slightly more feeble during this month. The right side was weaker, and she had lost the power to masticate or swallow solid food.

Altogether, during the year there had been one hundred and thirty characteristic seizures and forty-two attacks of violence, which were of undoubted epileptic origin. If we add both kinds together, we have a total of one hundred and seventy two epileptic attacks, which was a much larger number than in any previous year, as before stated, though they had not been before so carefully observed and counted.

During the month of January, 1886, she had nine epileptic seizures and four attacks of violence. The last epileptic seizure on the 31st was very severe, lasting some time, and being followed by several attacks of vomiting and twitching of the right eye and side.

After this time she was not able to sit up, though placed on a sofa. She also swallowed with difficulty, the milk, etc., remaining in her throat. Most of the time she was in a stupor, breathing heavily, and sometimes with difficulty. She sank gradually, and died on February 12th.

The autopsy was made fifty-two hours after death by Dr. A. N. Blodgett, assisted by myself, and the report is as follows: —

The body is that of a woman, of spare figure and medium height. The relative proportions of skull to face, and of the face to body, are apparently normal. Upon the body is an old cicatrix, occupying a position in the median line, and three cm. above the line of the supra-orbital arches. Higher on the forehead, are the appearances of other old cicatrices. The scalp is normal; nowhere are any signs of depression or other abnormal conditions observed. The calvarium is thick and heavy, the frontal sinus is absent. The dura mater cerebralis is not unusually adherent to the calvarium, The convexity of the dura is the seat of four small grayish excresences, varying in size from three to six mm., and rising about one mm. above the general niveau of the surrounding surface. The superior longitudinal sinus is empty. The dura is much thickened, bearing a close resemblance in some parts, especially over both anterior lobes, to a thick aponeurosis. It is unusually adherent to the pia, and when separated from the latter, is seen to present a marbled, or rather an embossed surface, as it is perceptibly thickened, and much more opaque in those parts which correspond to the intervals between the cerebral convolutions. The pia is everywhere quite vascular, and firmly adherent to

the substance of the brain, from which it is difficult to separate it without injury to the cerebral tissues. About one hundred cc. of serous fluid is discharged from the cavity of the dura mater.

At a point corresponding to the cicatrix of the supra-orbital ridge, is seen on the inner surface of the skull, a surface about two cm. in diameter, which is the seat of a moderate, irregular hypertrophy, with three small, prominent bony protuberances extending about two mm. above the general surface of the bone around. From the posterior border of the crista Galli, and extending as far backward as the optic groove, is a surface ca. three cm. long by fifteen mm. broad, to which the dura mater and the substance of the brain are so firmly adherent that they cannot be separated without laceration. The normal surface of the ethmoidal plate has been replaced by a dense and firm layer of bone, in which the perforations of the ethmoid are not preserved. The surface of the body of the sphenoid is raised above the normal level, and is thickly covered by small, elevated projections, to which portions of dura mater are inseparably attached. The entire surface is injected, and presents the appearances of chronic, progressive, osseous hypertrophy. The brain was removed with some difficulty, owing to the softened condition of the anterior lobes.

The vertebral arteries were the seat of extensive atheroma, and the inner coats were very loosely attached to the outer, so that they were easily separable. The entire basilar artery was the seat of the same atheromatous change, which had here intruded upon the inner surface of the vessel, so that its lumen was reduced in diameter at least one-half. The same condition existed in both posterior communicating arteries, and was especially marked in the carotids of both sides. This was also the case in the anterior cerebrals, and the anterior communicating artery was found to be entirely closed, being reduced to the appearance of fibrous cord. Thus the entire "Circle of Willis" was the seat of extensive atheromatous disease, the lumen of the basilar artery was reduced one-half by the encroachment of the same pathological process, and the walls of the vessel were much weakened. The calibre of the anterior communicating artery was obliterated at one point, so that there was no possibility of arterial supply to the opposite side of the brain through this channel. The anterior cerebral arteries were the seat of numerous small, aneurismal dilatations, as were the middle cerebral arteries of both sides. This condition existed through the entire fissure of Sylvius, on each side, and was noticed also in the primary ramifications of the distributing branches.

The frontal convolutions were flattened, the gray matter was thinned upon its periphery, and the convolutions presented the appearance of being subject to considerable pressure.

The ventricles contain but the normal amount of fluid, the consistence of the brain-matter is normal, and there is no appearance of pathological changes in these parts of the brain. Sections were made through the thalamus optici and through the entire hemispheres, as well as through the cerebellum, without discovering any notable signs of disease. Portions of the choroid plexus showed circumscribed patches of grayish color, due, apparently, to fatty changes of limited area.

Diagnosis ex Sectione. Pachymengitis circumscripta. Hypertrophea durae mat. Meningitis subacuta chronica. Atheroma arteriarum omn. Atresia arteriae basilaris cerebri. Endarteritis obliterans arteriae ant. com. Aneurisma circumscripta mult. Encephalitis circumscripta chronica. Hypertrophea basis cranii in os. front. et. sphen. med.

This case presents many features of interest, only a part of which I can consider this evening. The long duration, forty-five years, and the period of life which it covered are unusual. Few individuals have sustained so many and such severe attacks without succumbing much earlier.

No doubt the psychical form existed for the first twenty years after the accident, probably occurring as epilepsia mitior, or *petit mal*, and as nocturnal or larvated seizures. As time went on, the motor zones, as well as other portions of the brain, became more and more irritated, giving rise to the attacks of epilepsia gravior. That there is no pathological difference in the two forms, would seem to be borne out by this case. Either one was apt to occur, or one ran into another, and there was no regularity or periodicity to any of the attacks. It can only be said that every few days, the number of times increasing as the disease progressed, there seemed to be a necessity on the part of the brain to bring about a discharge to restore its equilibrium. As has been stated by Seppilli in his experiments on animals, and other authors in regard to man, the intensity of the attack may be entirely different at different times in the same individual. It may be diminished, abolished, or exaggerated under the action of various causes. The attacks depend largely on the excitability of the cerebral motor centres.

The attacks of violence to which I have referred as being of epileptic origin, are interesting as being one of the substitutive forms of epilepsy, and resembling or similar to those occurring in cases of larvated epilepsy, so-called for want of a better name. Had the patient above described belonged to the criminal classes, or had her social environment been lower and attended by a severe and anxious struggle for the means of living, the automatic and unconscious act of violence might have taken a homocidal or suicidal direction. Echeverria[2] quotes Lasègue, who pointed out the difference between the impulsive outbursts of ordinary insanity and epilepsy, as saying that unconsciousness stands prominently as the characteristic, distinctive of any act of violence perpetuated during the manifestations of the epileptic neurosis. "In either case," Echeverria says, "the original source of the transient fit is a morbid conception, whether impressed upon the sensorial regions of the brain by a precursory real emotion, or outer imitation, . . . or by some subjective inner feeling, the offshoot from a delusional groundwork that brings forth the excitation of sensory motor processes concerned in the insane abrupt act, automatically accomplished and elaborated in both cases in a coherent, logical manner, which necessarily involves a more or less considerable degree of deliberation." These last words are not correct as conveying the right idea of many of my patient's acts of violence, though the general explanation of the act seems extremely apropos. There were, however, attacks where a certain amount of coherence and deliberation were apparent. Thus on one occasion the patient got out of her window on to the roof of a little piazza. She was obliged to first place a chair on the roof, then with great care to step on to it, and then down. A very slight jar would have thrown her on to the ground. When once on

[2] Journal Mental Science, 1885.

the roof she felt she had accomplished her object to get the advantage of her nurse, and she remained quiet until brought back.

The varieties of insanity displayed in this case were extraordinary, and each kind was typical. Some of them occurred directly in connection with the epileptic attack, but others, as has been before stated, seemed to be independent, and the two varieties of symptoms, namely, those caused by the epilepsy and those caused by other exciting cerebral conditions, seem to run along together, or to jar against each other, producing many peculiar complications. In view of the extensive and peculiar post-mortem appearances, it is more easy to understand how this was possible.

The autopsy seems to show that the original injury was followed by an acute meningitis, which degenerated into a chronic meningitis, and the enormous hypertrophy, which is apparent on inspecting the dura mater is conclusive evidence of this fact. In this connection the following concerning the dura mater is of interest:

C. K. Mills, M.D., and J. W. White, M.D., report a case of epilepsy in which the operation of trephining was performed, and speak of the general nature of the spasms, which were not localized, nor confined to one limb nor one side of the body. They think the spasmodic seizures "were probably due to irritation of the dura mater, what might be called dural, or meningeal spasms. They were not due to irritation of the cortical motor zone, the form of spasm sometime spoken of as Jacksonian epilepsy. Lesions of the motor cortex cause disorders in the opposite side of the body; irritative lesions cause monospasm, or unilateral spasm of the opposite side.

The researches of H. Ducat[2] on cerebral traumatisms, have thrown considerable light on the rôle which the dura mater and its nerves play in these cases. Irritation of these branches of the trigeminal, or fifth pair of nerves which go to the dura mater, produces in addition to hyperæsthesia, pain and vasomotor disturbances, reflex spasms of peculiar character. Strong, powerful stimulation of the dura mater continued and developed was shown in certain physiological experiments of Bochefontaine to determine movements in both sides of the face, in the neck, and all four limbs. The movements of the limbs on the same side were more energetic than those on the opposite side.

The insane condition, apart from the epileptic, could be accounted for by the flattening of the frontal convolution, the thinning of the gray matter upon its periphery, and the indications of pressure.

The osseous hypertrophy of the middle portion of the sphenoid and ethmoid bones was remarkable. There was extraordinary roughening, and the appearances were similar to those that might be found in an old fracture. Not that any fracture had ever existed, but it seemed as if the force of the original blow had been projected backward and centred at this point, resulting in chronic inflammation, both of the meninges and bone. And it further seemed that this inflammatory trouble and the extraordinary growth and adhesion of the dura mater to the bone had gradually interfered with the circulation of the blood, through the circle of Willis, being in part the occasion of the thickening and occlusion of certain of its component vessels.

The nearness of the tempero-sphenoidal lobes may account for the loss (in part or in whole, it was not possible to determine which), of taste and smell, these lobes being given by Ferrier as the seat of these senses.

A further question which suggests itself is as to whether the occlusion of the anterior communicating artery and an evident degree of softening of the frontal convolutions had a bearing on the weakness of the right side?

[2] Journal Nervous and Mental Diseases, January, 1886.

RECENT PROGRESS IN OTOLOGY.

BY J. ORNE GREEN, M.D.

THE REMOVAL OF OSSEOUS TUMORS FROM THE EAR.[1]

THESE tumors are of two kinds, rapidly-growing, spongy osteomata of slight density, and the typical ivory exostoses or hyperostoses. The former is stated to be the more common form and is usually pedunculate, and of much greater vascularity than the ivory growths. Scrofula, rheumatism, gout, and syphilis, have been heretofore considered as predisposing causes on most unsatisfactory evidence, the author thinks, but believes that most frequently they originate in the active inflammatory processes accompanying chronic suppuration of the middle ear, which produce periostitis. Microscopically, the osteomata show Haversian canals bearing bloodvessels from the periosteum, with intervening, concentrically-placed lamellæ and bone-corpuscles, while the ivory hyperostoses consist of extremely dense, and but slightly vascular, osseous tissue, similar in hardness to dentine, and more compact than the temporal bone, with lamellæ not disposed concentrically around vessels, but running parallel to the surface. Where suppuration has not existed, the author thinks that slight, long-continued irritation of the meatus, such as may result from daily bathing in salt water, may be a cause of these growths.

In regard to treatment, an arrest of the tympanic suppuration is first necessary before attacking the osseous growth. The spongy osteomata can frequently be removed by an écraseur, dental forceps, or elevator; for the larger and more solid growths, the author considers the dental engine the only instrument which can be safely recommended. He uses to protect the deeper parts of the ear, a spoon-like, steel guard, the pattern of which is taken first in thin copper, and adapted to the particular case, so as to pass by the side of, and behind the exostosis. A small drill is then applied near the top of the growth without previous removal of the skin, and this opening gradually enlarged by increasing the size of the drills till the growth has been destroyed. Several operations are often necessary before the whole tumor is removed. Three assistants are necessary; one for the anæsthetic, one to work the engine, and one to hold the guard. The author reports fifteen cases operated upon successfully in this manner.

In two varieties of these tumors, the author considers no operation should be attempted. It is not requisite where two tumors from opposite walls come in contact, leaving a triangular space either above or below; for their contact prevents their further growth, and although deafness may result from the closure of the small opening by cerumen, this can be readily cleared away. It may be unjustifiable, on account of the risks of the operation where the growth is ivory-like, and situated in the deepest part of the meatus.

[1] By George P. Field, M.R.C.S. British Medical Journal, February 20 and 27, 1886.

The conclusions of the author are "(1) that aural exostoses must not be considered as at all necessarily the outcome of gout, rheumatism, or syphilis; (2) that their origin can, with strong probability, be attributed in many, if not in all cases, to some preceding local irritation; (3) that they can be safely and most effectually treated by drilling, when a suitable guard is employed to protect adjacent structures; (4) that their speedy removal is indicated whenever they hinder the elimination of secretions and discharges from the auditory canal, cause pain by pressure, or impair or prevent audition."

OTHEMATOMATA.

Virchow,[2] who had asserted[3] that he had never seen a pankratiastic ear in a healthy man which had been brought on by violence, now acknowledges that he has seen such a one in a Japanese wrestler, which was brought on by striking the side of the head against the opponent's chest.

Gudden had, twenty-five years ago, taken the ground that all othœmatomata were of traumatic origin. Franz Fisher, however, observed spots of proliferation, and softening in the cartilage of the auricle, which he regarded as the important changes predisposing to these tumors. Virchow had already confirmed these observations of Fisher, but now acknowledges that while this structural predisposition exists in many cases, in certain other cases the tumors have a purely traumatic origin, as in this Japanese.

TUBERCLE BACILLI IN THE EAR.

Eschle, Voltolini, and Trathan have already recognized tubercle bacilli in the otorrhœa of phthisical patients, but Habermann[4] has now found them in the tympanic tissues.

In a woman aged thirty-two, whose autopsy revealed tuberculosis-pulmonum and tuberculosis granularis subacuta universalis, he found the left tympanum filled with caseous pus containing large numbers of tubercle bacilli, the tympanic mucous membrane hyperæmic and swollen, infiltrated with small cells, which had penetrated into the bone, and this infiltration showing, in spots, caseous masses. In these miliary collections, and also in the diffuse infiltration, abundant tubercle bacilli were found. Similar changes were seen both in the mucous layer and the membrana propria of the drum-membrane. The infiltration was most marked at the lower edge of the drum-membrane, where the mucous layer and membrana propria had ulcerated. Habermann considers it a case of infection from the sputa in coughing.

STATISTICS OF OTORRHŒA ACCOMPANYING TUBERCULOSIS OF THE LUNGS.

Moldenhauer examined the records of the Medical Clinic at Leipzig, and found that of two hundred and ninety-four phthisical patients received, in only seven was suppuration of the ears noticed which could be referred to the general disease. This gives a percentage of 2.4, whereas the laryngeal diseases of a tuberculous nature amounted to twenty-six per cent.

DISEASE OF THE LABYRINTH IN CEREBRO-SPINAL MENINGITIS.

Accurate contributions to the pathology of the labyrinth are so rare that the following dissections of the labyrinths in a case of cerebro-spinal meningitis are particularly valuable.

It is reported by Steinbrügge[5] and was in the case of a man aged twenty, who died on the seventh day of his illness, and the autopsy confirmed the clinical diagnosis of cerebro-spinal meningitis. Testing of the hearing was impossible during life on account of the comatose condition of the patient.

Microscopically the left meatus auditorius internus was filled with a jelly-like exudation, as was also the entrance of the aquæductus cochleæ; the neighborhood of the aquæductus vestibuli showed small ecchymoses. The meatus externus, drum-membrane and tympanum were normal.

Microscopically in the left labyrinth between the nerve-trunks and their arachnoideal sheaths and also between the nerve-fibres were collections of cells, many of them resembling pus corpuscles, others larger with coarsely granular contents, and still others round and called ring-cells; there was great injection of the bloodvessels between the nerve-fibres but the fibres themselves showed no changes. The aquæductus cochleæ was filled with cellular masses and in several fortunate sections Steinbrügge was able to follow the passage of the pus through the aquæduct into the cochlea. The scala tympani contained collections of pus-corpuscles and "ring-cells" and the periosteum was in places loosened, but the scala vestibuli showed only the detritus of a coagulated exudation and no pus. The only changes in Corti's organ were hyperæmia and extravasations of blood. The vestibule showed less inflammatory changes than the semi-circular canals; in the upper and posterior canals there was very marked destruction, the bone deprived of periosteum and the canals filled with necrotic masses of bony particles, coagulated exudation and periosteal tissue. The facial nerve showed the same changes as the acoustic, and the right labyrinth the same conditions as the left, but in a lesser degree.

The author is not inclined to ascribe to the simple penetration of the pus into the labyrinth from the meninges the pathogenetic importance which used to be given it, for he regards the general disease as due to an organized specific virus, probably the coccus already described by Leichtenstern, which, being very minute, can penetrate the labyrinth from the cerebro-spinal fluid more easily than the pus-cells can, and there sets up necrotic processes, even without pus, which destroy the delicate labyrinthine structures.

The total and permanent deafness, frequently the result of cerebro-spinal meningitis, he regards in most cases not as a paralysis caused by the pressure of the exudation on the nerve-trunk, as has been often assumed, but due to the destruction of the terminal nerve-fibres in the labyrinth. The exudation which undoubtedly occurs in and upon the nerve-trunks of both the acustic and facial nerves is absorbed, although in exceptional cases there may be cicatricial contraction of the neurilemma and consequent impairment of the function of the nerve.

ABSCESS OF THE BRAIN FOLLOWING OTORRHŒA, CURED BY OPERATION.

This is the second successful case of evacuation and cure of an otorrhœal abscess within the cranial cavity by operation, the first being reported by Schondorff.[6]

[2] Virchow's Arch., 101, p. 357.
[3] Onkologie, 1, 138.
[4] Prager Med. Wochenscrift, No. 6, 1885.
[5] Zeitschrift für Ohrenheilkunde, xv, 4.
[6] Archiv. für Klin. Chirurgie, 1884.

The present case is reported by Truckenbrod[7] of Hamburg. A man of twenty-eight with an otorrhœa on the left side, of eighteen months' duration, showed pyæmic symptoms with tenderness of the bone, for which the mastoid process was opened and at the depth of five millimetres, fœtid caseous pus was evacuated.

Temporary relief resulted, but fourteen days after there was a return of the fever, with right facial paralysis, aphasia, and amnesia, with œdema above and behind the ear. Three centimetres upwards and backwards from the meatus was a carious fistula which was enlarged into the cranial cavity and offensive pus was seen exuding between the dura mater and the bone. After further exposure of the dura mater an exploratory puncture showed pus and on incision of the dura a teacupful of extremely offensive pus was evacuated from a cavity the size of a small orange. This was washed out with a one per cent. sublimate solution, drained and the wound dressed with corrosive sublimate bandage.

The fever subsided in a few days, the aphasia slowly improved, in ten days the patient was out of bed and in six weeks left the hospital. Two months after a return of fever required another puncture and further drainage of the abscess and this was followed by a rapid and perfect healing. Five months after the patient remained well, and was following his profession of an architect, only showing occasionally a momentary loss of a word.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.[1]

FIRST DAY. — THURSDAY, JUNE 17. — AFTERNOON SESSION.

SPASM OF THE GLOTTIS IN RICKETS,

by James T. Whittaker, M.D., Cincinnati, O.

The author emphasized the fact that this accident belongs almost exclusively to rickets and dwelt upon the value of recognition of this fact, because rickets is, generally speaking, a curable disease, and the spasm of the glottis disappears with the successful treatment of its cause, while treatment addressed to the larynx directly, remains without effect.

The speaker next quoted from a number of authorities to show that this relation between the two affections is not so universally recognized in this country and England, as in Germany and France. The two latest authors of text-books in Germany, Strimpell and Sichorst, declare, one that two-thirds and the other that nine-tenths of all spasm of the glottis depends upon rickets.

Spasm of the glottis is often the first sign to unmask rickets, for the other evidences of the disease are often attributed to other causes. Thus general malaise is attributed to dentition, intestinal catarrh to errors in diet, fever and sweating to malaria, bone deformities to premature efforts upon the feet, etc.

Spasm of the larynx indicates the stage rather than the degree of rickets, in that it occurs mostly in cases of rapid advance of the disease and does not appear in cases of slow progress. So in the spring and fall, when rickets advances in leaps, spasm of the glottis has occurred in epidemic form.

The essayist discussed next the various theories of rickets which continue to elude investigation to a degree characterized as exasperating, but facts accumulate which go to give it place among the chronic infections. The exemptions of hot climates and mountains, Iceland, the Faroe Islands, the complete immunity of Davos, notwithstanding the improper feeding and improper hygiene of sucklings at these places show that faults in diet cannot be the cause of it, and the symptomatology of it fits better among the chronic infections produced by specific causes.

Spasm of the glottis in the absence of any constant lesion falls among the neuroses. The question as to the reflex or direct character to the irritation producing it was decided after a review of the evidence in favor of the latter, and since Rosenbach has demonstrated the micro-organism of tetanus which often begins with and may go no further than trismus, the maintenance of a mycotic theory for the laryngospasm of rickets may be adopted as the best provisional explanation. The mode of onset and character of the accident were next detailed and the symptomatology illustrated with a typical case.

The inefficiency of anæsthetics and all direct means of treatment, as by intubation, tracheotomy, etc., were mentioned next, and douches, flagellations, electricity, cold air, direct appeals to the skin on the first appearance of attack, were described as the best means of combating and more especially of preventing the attack. Cod liver oil, and more especially phosphorus which may be looked upon almost in the light of a specific were considered the best means of speedily relieving the rickets, and thus removing the cause of the laryngeal spasm. It has the most favorable prognosis of all kinds of laryngospasm, as Monte lost but eight of three hundred and twenty-nine cases.

DISCUSSION.

Dr. A. Jacobi, of New York. This is a subject in which I am much interested. As has been said, this is almost always due to rickets. Its causation may be the pressure of the enlarged glands about the neck irritating the nerve. When the rickets disappears, the spasm of the glottis also disappears. The disease may be primary or secondary. In forty-nine out of fifty cases of spasm of the larynx, the cause is rickets, and in forty-eight of these it is rickets of the cranium and of the meninges of the brain. When the cranium is opened we find congestion. Cranio-tabes need not be developed to any marked extent. Where we have a succulent cranium, we have succulent meninges and a succulent brain. There is meningeal hyperæmia and meningeal effusion in such cases. In regard to prognosis, if you have six weeks during which to carry out proper treatment, you may be sure that the child will lose its laryngismus stridulus, but during that time, the child may die in an attack.

Dr. William Pepper, of Philadelphia. In a case of spasm of the glottis in whooping-cough seen recently with Dr. Morris J. Lewis, the attacks were so severe that on several occasions, the child apparently died. Nitrite of amyl was successfully used for the relief of these attacks. It was found that a combination of one part of nitrite of amyl with nine of sulphuric ether gave the best results.

Dr. Jacobi. I have recently used nitro-glycerine

[1] Continued from page 616.

[7] Zeitschrift für Ohrenheilkunde, xv, Nos. 2 and 3.

for a similar purpose; I have used it in inflammatory hydrocephalus in young infants, and I believe with fair results.

NOTES ON SOME CASES OF DIAPHRAGMATIC PLEURISY,[2]

by EDWARD T. BRUEN, of Philadelphia.

DEMONSTRATION OF BACTERIAL CULTURES FROM A CASE OF MYCOTIC ENDOCARDITIS IN MAN, AND OF SPECIMENS SHOWING THE EXPERIMENTAL PRODUCTION OF THE DISEASE IN RABBITS,

by T. MITCHELL PRUDDEN, M.D., of New York.

The communication was a preliminary one, the experiments not having yet been completed. For some years the presence of bacteria has occasionally been observed in the cardiac and peripheral lesions of malignant ulcerative endocarditis. It has, however, been found that not only not all cases of acute vegetative endocarditis, but not even all cases of ulcerative endocarditis present bacteria in their lesions. The speaker thought that the anatomical distinction was not clearly enough drawn between simple and malignant ulcerative endocarditis. Of eleven cases of well-marked ulceration of the valves which he had studied within the past four years, only four showed the presence of bacteria.

In only one case of malignant ulcerative endocarditis was he able to isolate and study the living bacteria. This was a case of pyæmia following cuneiform osteotomy for club-foot. The tests applied showed the bacterium to be the staphylococcus pyogenus aureus.

The experiments on animals were then described, and the following conclusions were drawn. If we sum up the results of combined morphological and biological examination of the cases thus far studied, we find that the sphero-bacteria found in the cardiac and peripheral lesions were the stryphococcus pyogenus and the staphylococcus pyogenus aureus and albus, either alone or together.

The intravenous injection of either of these or a mixture of them, into the rabbit after mechanical or chemical injury of the endocardium is capable of inducing lesions strictly analogous, if not identical with those found in malignant ulcerative endocarditis in man. The coccus sepsis of Nicolain is capable of producing similar results.

Neither the endocardial injury nor the intravenous injection of bacteria alone, are sufficient to induce the the cardiac lesion. Both are necessary.

As far as the observations go, they tend to confirm the view that malignant ulcerative endocarditis is simply one of the forms of pyæmic lesion determined by the predisposing conditions of the endocardium. Whether or not there are other forms of the disease induced by other species of bacteria or having no relation to bacteria at all, are questions which are more likely to be settled by experiment than by conjecture.

Adjourned.

FRIDAY.— SECOND DAY.— MORNING SESSION.

The first paper was by W. T. COUNCILMAN, M.D., of Baltimore, on

CERTAIN ELEMENTS FOUND IN THE BLOOD OF MALARIAL FEVER.

It has long been known that changes in the blood occur in this disease. It is now known that in the red corpuscles, there are certain bodies which appear to be living organisms, and these occur only in this disease. These are found by taking a drop of blood and spreading it on a slide, so that there shall be but a single layer of corpuscles. These are stained with a weak solution of fuchsin. The nuclei of the white corpuscles will be intensely stained, the red slightly stained, and in some of the red corpuscles will be seen brightly stained bodies of irregular shape. These exhibit distinct amœboid movements. The variety of their changes of form was illustrated by drawings. Certain hyaline bodies also found were described. The speaker then referred to the work of other investigators in this field, and gave a review of the results which they had obtained.

TETANY,

by H. M. LYMAN, M.D., of Chicago.

Tetany may be defined as a more or less generalized, intermittent, usually tonic convulsion of the muscles of the limbs and trunk, sometimes involving the face and visceral organs, usually painful, but never attended with loss of consciousness. The disorder is functional, and is based upon no distinctive pathological lesions of the central nervous organs. It is manifested in a series of attacks, which occur at intervals varying in length from a few hours to weeks, or even months. These attacks are sometimes very abrupt in their onset; oftentimes they are preceded by headache, disturbances of the digestive organs, and various disorders of sensation in the skin and muscles, after which the characteristic paroxysms appear. During the paroxysms, the flexor muscles are usually the seat of contracture, but sometimes the extensor muscles of the limb are principally involved, so that the fingers and toes may be spread apart and extended. Sometimes the flexor muscles about the elbow are principally involved. Single muscles alone may be attacked. These contractions may be very energetically developed, with considerable pain, or they may be sluggish and painless. The pain is usually due to the muscular spasm, but neuralgia may be associated with the cramp, and the skin may sometimes become inordinately sensitive. The pain may, at other times, become located about the joints, which then present the characteristic appearance of rheumatism. Diminished sensibility in certain parts of the body may be sometimes observed during or after an attack. The special senses are rarely disturbed. The action of the heart is seldom changed, except by transient palpitations; and only when the respiratory muscles are involved in severe cases, is there any difficulty in breathing. A febrile movement is only remarked when inflammatory complications are present. Electrical tests indicate an increased excitability of the motor nerves, which may sometimes even include the facial nerves.

The disease is rarely fatal, although death has occasionally resulted from prolonged spasm of the respiratory muscles. The duration of the disorder is quite variable, and relapses are rather frequent.

Having no relation with any particular lesion of the nervous centres, tetany appears to be dependent upon a functional instability of the nervous and muscular organs. This instability is usually the result of diseases that affect the organs of digestion and the processes of nutrition. Congenital weakness, and the period of debility that precedes or follows any acute disease, may then afford occasion for the manifestation of this particular disorder.

[2] See page 1.

The principal diseases with which tetany may be confounded, are tetanus, organic diseases of the brain and spinal cord attended with contracture, epilepsy, especially the so-called cortical or Jacksonian variety, professional cramp, and spasmodic phenomena of ergotism.

The treatment must be directed in a general way against the fundamental instability of the individual constitution. Mild attacks require no special therapy, but severe attacks often demand the energetic use of narcotics and anæsthetics for their relief.

DISCUSSION.

Dr. John T. Carpenter, of Pottsville. I have one observation to make bearing upon the causation of this affection, and that is with reference to its association with septic poison. The first time I noticed this association was in a child two years of age, with an abscess of the buttocks. The muscles of the eye and of one arm and hand were affected. There was no clonic spasm. Later, the muscles of the jaw became involved. The mouth could not be opened. Under chloroform, the jaws were separated and a piece of soft wood placed between the teeth. To my surprise, the entire spasm relaxed in the course of five minutes. The disease, however, progressed, and the child died. I attribute the condition to absorption of poison from the abscess. In studying my cases of tetany, particularly of the milder variety, I think that I am able to trace them to septicæmia.

Dr. A. Jacobi, of New York. In a large number of these cases, we have reason to believe that there is meningeal hyperæmia. An occasional cause which has not been mentioned is masturbation. This I have seen in one case, in which the attacks always followed masturbation. The attacks had not occurred before the age of puberty. We know that severe nervous attacks may come on during sexual excitement. I recall the case of a young woman who was thrown into catalepsy every time she cohabited, and had the attacks only at such times.

PERFORATING INFLAMMATION OF THE VERMIFORM APPENDIX, WITH SPECIAL REFERENCE TO ITS EARLY DIAGNOSIS AND TREATMENT,

by Reginald H. Fitz, M.D., of Boston.

A historical statement was made of the origin of the terms typhilitis, perityphilitis, and perityphilitic abscess. The want of exact agreement as to what was understood by these terms was emphasized. Attention was called to the importance of bearing in mind that in the vast majority of cases, the primary disease was an inflammation of the cæcal appendix. The term appendicitis was preferred to typhilitis, as avoiding the possibility of a misunderstanding, and as localizing the disease in its usual place of origin.

The paper was based upon an analysis of two hundred and fifty-seven cases of unquestionable perforating ulcer of the appendix, and of two hundred and nine cases diagnosticated as typhilitis, perityphilitis, and perityphilitic abscess. In the latter series, the diagnosis was clinical, not anatomical.

The important features in the etiology of appendicitis were considered, also the limitations as to sex and age. It was found that the disease occurred most frequently among previously healthy youths and young adults, especially males; that a fæcal concretion or foreign body was present as a local cause in more than three-fifths of the cases. Attacks of indigestion and acts of violence, especially when indirect, were exciting causes in one-fifth of the cases. The action of these causes was favored by a constipated habit, or by congenital or acquired irregularities in the position and attachment of the appendix.

The first characteristic symptom of a perforating appendicitis was found to be a sudden, severe, abdominal pain. This occurred in eighty-four per cent. of the cases, and usually in the right iliac fossa, where tenderness could always be found, even when the pain was referred to some other locality. The pain was attributed to the actual perforation or the detachment of fresh adhesions.

Fever was the next characteristic symptom, and occurred in the course of twenty-four hours. Finally came the swelling which made its appearance in the course of three days.

The chief source of danger from the appendicular peritonitis arose from its becoming generalized. Such a result followed most frequently between the second and fourth days. More than two-thirds of the patients died during the first eight days and two-thirds of these between the fourth and eighth days inclusive.

The question of a differential diagnosis was then discussed. The termination in resolution was referred to. It was considered to take place in about one-third of the cases as approximately determined from the recorded cases of typhlitis and perityphlitis. Even resolution might be undesirable since the number of cases of recurrent disease is considerable, and might have been prevented by appropriate treatment.

The reader recommended at the outset, the opium treatment with rest and a liquid diet, the food being given in small quantities, frequently repeated. If it became evident that general peritonitis was imminent at the end of twenty-four hours after the sudden intense pain the appendix should be exposed and removed. Usually the symptoms were not so urgent that the appearance of the swelling could not be awaited. Although Willard Parker advised that the abscess might be opened as early as the fifth day, the practice has been to operate at a later date. Forty-seven per cent. of the cases were operated upon in the second week and twenty-six per cent. after the third week.

More favorable results in the future were to follow the earliest possible opening of the swelling. This in most instances was at the outset, a sac formed by a circumscribed peritonitis. It was usually present on the third day of the disease, dating from the pain, its first marked characteristic symptom. Negative results from a diagnostic puncture did not contraindicate the operation.

DISCUSSION.

Dr. William Pepper, of Philadelphia. I desire to relate two cases which bear upon this point. On Saturday last, while making a post-mortem examination for another purpose, I examined the appendix, as is my usual custom. The appendix contained two hard concretions looking like date-seeds and some hardened fæces. These must have been there for a long time, but there were no evidences of inflammation. It was clear that the presence of these masses had been tolerated for a long time without exciting any local trouble.

A few days before that, I made a post-mortem examination in the case of a man aged forty, who for

years had sacrificed every interest in life for his business. On Monday he had some nausea and vomiting for which he took a laxative. He returned to his home in the evening feeling badly and sent for a physician. There was vomiting, some fever. There was marked abdominal pain which was relieved by the use of opium suppositories. On the fourth day I examined him, but could detect no tumor in the right iliac region. There was frequent and free micturition. This symptom would have a bearing upon the possible existence of intestinal obstruction. Another marked symptom was tenesmus. Several large stools had followed the laxative. Enemas of warm oil produced no evacuation. Rectal examination gave a sense of indistinct dulness, but showed no hard tumor. Collapse set in on the fifth day and the patient died on the seventh day.

The question of laparotomy was carefully discussed. It was not performed at first because of the uncertainty of the diagnosis, and later when the diagnosis became evident, because of the condition of collapse. At the autopsy no peritonitis was found. There was a contraction of the ascending colon at its junction with the transverse colon, but not sufficient to cause complete obstruction. A circumscribed abscess was found around the vermiform appendix, which was dilated. There was a large perforation. No concretion was found.

These cases have impressed upon me the view of which I am convinced, namely, that perforation of the appendix is only the explosion of an old catarrhal appendicitis; that it is not an acute idiopathic affection.

The diagnosis in these cases is a matter of great difficulty in the early days, except where it is associated with considerable pericæcal inflammation.

I agree with Dr. Fitz, that early operation gives the only chance of saving the patient. I should not think the third day any too soon. The difficulty is to arrive at a sufficiently clear diagnosis at that early date to justify laparotomy as an exploratory operation.

DR. J. T. DANA, of Portland, Me. I am sure that it is not rare to find inflammation of the appendix as a latent affection. In a case which I recently saw the first symptom was the occurrence of general peritonitis. By exclusion I made the probable diagnosis of perforation of the vermiform appendix. The case resulted fatally in seventy-two hours. At the autopsy general peritonitis was found, and there was an opening in the appendix through which a concretion had escaped. A second was found within the appendix. There had been no previous symptoms to call attention to disease of the appendix. This illustrates a class of cases of which I have seen not a few.

DR. A. L. LOOMIS, of New York. This is a positive paper, and it gives us some positive data on which to base our modes of action in this condition. From my experience I should say that it was impossible in the majority of cases to make an early diagnosis by the ordinary means of diagnosis. Of the symptoms given by the patient the most certain indication seems to be given by the occurrence of a chill. When pain is marked it will usually be localized in the left side, but not necessarily. Recognizing the importance of the early diagnosis, I decided several years ago in such cases to put the patient under the influence of an anæsthetic and examine by the rectum and externally. In the first case that I adopted this plan, the chilly sensation had preceded my visit twenty-four hours. By bi-manual palpation, I satisfied myself that there was an increase in the region of the appendix. I expressed the opinion that perforation had occurred and recommended operation. This was refused. Peritonitis set in within twenty-four hours and the patient died. In two other cases I have made the diagnosis by the same plan. It must be remembered that the vermiform appendix does not occupy the same position in all individuals.

As soon as the diagnosis of perforation is made out, the operation should be performed.

DR. E. G. JANEWAY, of New York. These cases of appendix disease may be divided into three classes. In one an inflammatory process of the cellular tissue, with or without the formation of pus is established. This may go on to recovery. If pus forms, surgical procedures should be resorted to. In another class of cases there is a circumscribed collection of pus in the peritoneal cavity. In this class operation should be resorted to as soon as the presence of pus is determined. In the third class we have as a result of the perforation of the appendix, general peritonitis.

The pain and tenderness in these conditions are not always on the right side. As has been said, the position of the appendix is not constant.

In these cases you can generally find on careful examination in the region of the cæcum, at some point a feeling of deep-seated induration, and at this point there is tenderness.

The Association then went into

EXECUTIVE SESSION.

The officers elected for the ensuing year are as follows: —

President, Dr. S. Weir Mitchell, of Philadelphia.
First Vice-President, Dr. Francis Minot, of Boston.
Second Vice-President, Dr. R. Palmer Howard, of Montreal.
Secretary, Dr. George L. Peabody, of New York.
Recorder, Dr. James T. Whittaker, of Cincinnati.
Treasurer, Dr. W. W. Johnson, of Washington.
Council, Dr. William H. Draper, of New York, Dr. Robert T. Edes, of Boston, Dr. H. M. Lyman, of Chicago, Dr. Samuel C. Busey, of Washington, Dr. Frederick C. Shattuck, of Boston, Dr. William Osler, of Philadelphia, and Dr. W. W. Welch, of Baltimore.

The proposition with reference to the formation of

THE ASSOCIATION OF AMERICAN PHYSICIANS AND SURGEONS,

was presented and approved. The following committee was appointed to confer with other organizations: Drs. William Pepper, of Philadelphia, Robert T. Edes, of Boston, R. P. Howard, of Montreal, James T. Whittaker, of Cincinnati, and Francis Delafield, of New York.

(To be continued.)

THE NEW HAMPSHIRE MEDICAL SOCIETY.

THE ninety-sixth annual meeting convened at Concord, N. H., June 15, 1886, the President, George A. Crosby, M.D., of Manchester, N. H., in the chair.

DELEGATES.

Dr. Jenks and Dr. Hutchinson from the Rhode Island Medical Society.

MEMBERS PROPOSED AND ELECTED.

Drs. G. M. Kimball, Thomas Hiland, Ellen A. Wallace, Concord; A. H. Taft, Manchester; J. B. Raynes, Bradford; George A. Allen, Bradford, Mass.; O. W. Goss, Lake Village; Ed. F. Houghton, Claremont; A. W. Blair, Orford; Bradford Allen, Nashua; W. W. Wilkins, Manchester; Charles A. Blake, State Workhouse, Mass.

THE COMING PHYSICIAN.

The president in his address, after reviewing briefly the past and present state of the profession, asked: Shall the practice of medicine sink to the level of a trade where every competitor supplements his skill as an artisan by all the tricks of cunning and diplomacy of which he is capable? Shall the body of the profession be broken up into fragmentary joints, each little segment calling itself a specialist, until the organs of the body are parcelled out as booty is divided among thieves? Shall the grand old column be broken up into detachments that shall ultimately destroy one another, because men honestly differ as to the means employed to subdue disease? Shall certain drugs and certain methods be considered Catholic and all else irregular and to be damned by bell, book, and candle? These are some of the dangers that have beset the onward progress of medicine in the past, and which are liable to retard its progress in the future. If we do not understand the wonderful worth and greatness of life our intellect will never be able to cope with the difficulties of our profession and enable us to withstand the temptations by which we are surrounded. Every created object is holy, as being God's workmanship. But as human life is the most marvelous and mysterious of all the emanations from the Deity it is entitled especially to reverential treatment. When the first Napoleon requested that lethal doses of opium should be given to those that were sick and would surely fall into the hands of an implacable enemy, the great surgeon replied: "It is my duty to save life not to destroy it."

The president spoke of the prevalence of abortion and its deleterious influence, physically and morally, upon society; and urged upon the medical profession their duty to exercise their utmost influence against the growing evil and to educate the people to a proper realization of the brink upon which they are standing. He then discussed the existing laws relating to coroner's inquests. You have in the coroner an officer armed practically with the utmost power of the law. He decides in the first place whether an inquest be necessary or not. Thus it is not difficult for him to close the door to all judicial investigation of a crime, and even to aid in the concealment of evidence by authorizing speedy burial. He may thus shield the guilty and injure public safety. On the other hand the opportunities for a man, prompted by malice or vindictiveness, or the desire for cheap notoriety, are enough to make us tremble. With full judicial powers of examination and commitment, with his chosen constable, selecting his own jury, with supreme control of the investigation, which, with the consent of part of his jury, he may make secret, with the selection of his medical witnesses, and the power to summon and hear, or omit and exclude whomsoever he will, uncontrolled by superior authority, and responsible, practically, to no one for his action, he may bring ruin upon a life, or forever cloud and embitter it, throwing suspicion on the character of the living and blackening the memory of the dead. In one word, he may make an inquest in the worst sense of the term, an inquisition. The sole purpose of the coroner's inquest is the detection of crime. When suspicion exists his functions are two-fold, one is to determine with certainty whether the death has resulted from natural causes or from violence; the other is, to determine, if it be found to be a case of violence, how that violence was caused and whether it constitutes a crime. One is a question of medical investigation; the other a question for legal determination. Let us try and have some law passed, relegating to each profession the functions belonging to them. Have medical examiners appointed in each county whose duty it shall be to take immediately possession of the body and ascertain the cause of death; if resulting from natural causes to turn it over to the undertaker; if from some unnatural cause, to report to the judicial officer whose duty it should be to take cognizance of crime.

The speaker then pointed out the duty of the physician to educate the community in sanitary science, the ventilation, heating, and drainage of dwellings and school-houses.

Therapeutics should be better understood. We are fast drifting into a refined dillettante style of prescribing and losing sight of the true value of a drug. Pharmaceutical chemists are filling our tables with fancy combinations, having a captivating nomenclature that would paralyze our ancestors were they to revisit us. Highly ornamental and extravagently written monographs, advertisements and recommendations of their preparations thrust upon us by agents, and making the principal portion of our mail, are crowding from our shelves books on therapeutics and materia medica. So many good old remedies have been lost sight of by these new styles that I am inclined to advise that we hold on to the few we have left a short time longer and let them produce their own chemical changes whilst wrestling with disease inside the body and not give up entirely to these new-fangled patent-back-action remedies that will hit most anything.

SCHOOL HYGIENE.

DR. D. M. CURRIER read an exhaustive essay upon this subject. He complimented the New Hampshire State Board of Health for the work they had accomplished in this direction. He suggested the ventilation of rural school-houses by constructing an incoming or cold air duct under the timbers of the floor, reaching from outside and opening directly upwards under the stove, and furnished with a valve to regulate the flow. Completely surround the stove by a galvanized iron case. Ventilation could be provided by placing a register in the chimney near the floor. The chimney should be large, and the smoke-pipe should pass through it to the top, thus creating a powerful ventilating draught.

REPORT ON OBSTETRICS.

DR. FRANK BLAISDELL closed his somewhat lengthy paper with the following summary: I have thus tried to indicate as well as I could in the limited time allowed a paper of this kind, the following: First, that the effects of modern civilization upon our child-bearing population is such, that our women are unfitted for the highest duties of motherhood, judged from a

physiological standpoint. Secondly, that there are in certain cases of confinement definite indications for the use of the forceps as a prophylactic agent in preventing results which often follow expectant treatment, and that the time of election for the physician to interfere, when interference is necessary, is preferably, the earliest time possible rather than to wait. Thirdly, that the use of anæsthetics in labor is too indiscriminate; they should not be used in every case of labor, but should be prescribed according to indications the same as any other remedy of like power, and that hæmorrhage is not the result of any particular anæsthetic agent, but the effect of the agent upon reflex uterine action. Fourthly, that there is considerable reason to believe that the utility of the membranes as dilators has been overrated. Fifthly, that the treatment of placenta prævia by Carr's method of pulling away the placenta entire, letting it precede the child, with rapid delivery of the child, has been eminently successful with those who have tried it, of saving both mother and child. And sixthly, that it is just as well to let the perineum alone in ordinary labor. I am aware that some of these views differ somewhat from the views advocated in our text books, but I have been led to them by considerable thought and a quite busy obstetric practice of nearly ten years. I have also seen many things in the writings of some of our best obstetricians that has strengthened me. None of you dislike meddlesome midwifery, as that term is generally understood, more than I, but I do believe in a mediatorial midwifery, a midwifery that will interfere to prevent suffering, that will assist nature when she falters, and will remove those conditions that will prevent her doing her perfect work and save a woman from the consequences that too often follow a too implicit faith in a power given to women in its perfectness and completeness by the Almighty, but misused, perverted, and oftentimes rendered ineffectual by the bad influences of our national life, and the follies of our progenitors; a midwifery that I believe would have led any one of you to have interfered and have saved Rachel to Jacob when she died in labor on the plain near Ephrath.

MEDICAL COMMON-SENSE.

DR. C. A. ALLEN closed with the following words: The time is coming when there will be no sects among educated physicians. The present war between the friends and opponents of the National Code but points the way. It will not be this year nor the next. It will be when the world has grown wiser and has learned to value at its true worth any creed that uses its name as an advertising medium only. It will be when elementary medicine is taught in our common schools; when common-sense shall reign in the minds of the people and they have learned that *pathy* does not make the doctor. It will be when our lawyers, our ministers and our teachers shall add a general knowledge of medicine to that of their regular calling. It will be when doctors depend upon their profession rather than to prop it up with statutory laws.

THEORY AND PRACTICE OF MEDICINE.

DR. J. F. BROWN discussed briefly the character and treatment of cholera infantum, typhoid fever, small pox, diphtheria. In the treatment of diphtheria he has always put in practice a mild caustic medication with antiseptic remedies at the outset. A mild solution of nitrate of silver every hour alternated with a soothing lotion, with tonic constitutional remedies. Some of the worst cases set in very insidiously, and before the family are aware of its severity, the whole system is saturated with the virus. With reference to the management of deep-seated, large and indolent ulcers, the difficulty is, after getting the sore into a granulating condition, to cause it to heal over without subjecting the ulcer to strapping and constant care on the part of the surgeon. Another plan is by the elastic stockings, which are invaluable in some cases.

In what is known as the oakum treatment of ulcers, the diseased surface must be brought into a healthy condition, and all effete matters removed by nitric acid or nitrate of silver with poultices. Then pick up oakum fine and soft, make a pad twice as large and proportionately thick with a fine piece of soft cloth laid over it and simple cerate dressing laid on the ulcer and the pad placed over it with oakum extending over the edges on all sides to make the pressure equable. Then bandage nicely.

I have adopted a method for the prevention of pitting of the face in small pox which I obtained from an old number of Braithwaite's Retrospect. I have modified it to some extent. What is desired is to stop ulceration before it has gone through the true skin. Insert a strong solution of nitrate of silver, about twenty grains to the fluid ounce into each pock. The manner of doing it is to prick the pustule with a lancet and press out the pus or serum, then put in the nitrate of silver solution on the point of the lancet. The large pocks immediately are less inflamed and less painful. The small ones scab over and fall off in a few days, leaving the face smooth.

REPORT ON SURGERY.

DR. C. B. HAMMOND read a lengthy article upon antiseptics. The ease with which bichloride of mercury is prepared, and its freedom from odor, makes it one of the most agreeable antiseptics. In the amputation of fingers, especially, it is rare to fail of obtaining good results by the following method. Having checked all oozing and bleeding, unite the flaps with carbolic catgut sutures, and place over the edges of the flaps a small piece of oiled silk. Over this, place a thick layer of borated absorbent cotton which has previously been wrung out in a solution of bichloride of mercury of the strength of 1-3000, taking care that the cotton shall come well down on the healthy skin. Over this, place another layer of dry, borated cotton and a piece of absorbent lint and a bandage. Remove this dressing in from five days to a week, and substitute a similar one for about the same length of time. I have been accustomed to use bichloride of mercury in the strength of 1-3000 as a post-partum vaginal douche, and find that even at this strength it may produce bad results; at least, I have seen a troublesome diarrhœa occur, which ceased upon discontinuing the injection. There is danger in its use for irrigating large wounded surfaces at the strength of 1-2000, and for any irrigation, that strength is sufficient.

The use of glycerine in dressings was discussed, and also the use of muriate of cocaine as an anæsthetic.

A case of recovery after herniotomy, performed for the relief of a strangulated femoral hernia, was reported, remarkable for the time that elapsed from the first symptoms to the date of operation, which was eighty-six hours.

FASHIONABLE FOLLIES.

Dr. M. H. Felt made an onslaught upon numerous novelties in medicinal preparations, speculative theories, and fashionable specialists.

TYPHOID FEVER.

Dr. I. H. Adams presented a short paper upon this subject, discussing the diverse opinions as to its origin.

NERVE WEAKNESS.

Dr. H. C. Holbrook spoke of functional nervous disorders, briefly tracing their sources, progress, and symptoms. In the treatment of chronic neuropathic disorders, the general condition of health and nutrition must not be overlooked. Tonics are indicated in most cases, and of these, a bitter, like salicin or cinchonidia, in combination with strychnia, diluted phosphoric acid and the chloride of iron, gives the best result in the largest number of cases. Elixir of phosphate of iron, quinine, and strychnia is a powerful tonic, but in some cases cannot be borne, except in small doses. Sedatives should not be used too freely. Opium and chloral hydrate should be very sparingly tried, for these patients form the opium and chloral habit most readily. A nerve, made over-irritable by anæmia, can be quieted more effectually by enriching the blood than by giving a drug. Sedatives should never be used to the exclusion of tonic remedies. Bromides may be given for a long time without injurious effect, combined with some powerful reconstituent. The use of drugs which directly affect the nervous system was briefly discussed, and also general electrization and dry cupping.

AN IMPROVED METHOD OF MEASURING THE CHEST.

Dr. Wilkins. The improvement consists, first, in a double tape-measure, or, in other words, a measure that commences to enumerate from a common centre; second, the establishment of a middle, anterior perpendicular line of the chest, from which to take comparative measurements of the two sides. The method was described at length, and its advantages pointed out.

The death of Dr. C. F. Bonney, of Manchester, was reported by Dr. Howe, and the death of Dr. Joseph H. Smith, of Dover, by Dr. Hill.

Reports of delegates to other societies, and to the Dartmouth Medical College were received.

A Committee was appointed to consider the preparation of a history of the Society, Dr. I. A. Watson, Chairman.

The following officers were elected: President, Prof. C. P. Frost, of Hanover; Vice-President, Dr. S. W. Roberts, of Wakefield; Treasurer, Dr. D. S. Adams, of Manchester; Secretary, Dr. G. P. Conn, of Concord; Anniversary Chairman, Dr. M. H. Felt, of Hillsborough Bridge.

Recent Literature.

Transactions of the Obstetrical Society of London. Vol. XXVII, for the year 1885. London: Longmans, Green & Co. 1886.

This volume of Transactions contains, as usual, a large amount of valuable material which has appeared in the society reports, as given from time to time in the current medical literature, but which becomes additionally available when collected in book form. Some of the articles have been noticed in the half-yearly report on the Progress in Gynæcology. The most noteworthy contributions in the present volume will be briefly referred to.

Dr. Duncan's paper "On Extirpation of the Entire Uterus," after giving the details of two vaginal extirpations, urges very strongly the claims of supra-vaginal amputation, on the grounds of its being the safer operation, and that the ultimate results are better. He supports his position ably by statistics.

Dr. John Williams's paper on "The Circulation in the Uterus" is of special importance, on account of its bearing on the question of the interference with the circulation caused by flexion, a fact which he denies. An abstract of this paper was given in the Journal a few months ago.

Two papers by J. Matthews Duncan, one on "Ulceration," the other on "Hypertrophy of Lupus of the Female Generative Organs," both illustrated by plates are important contributions to our knowledge of these conditions.

Dr. Williams has a second paper on "Serous Perimetritis," and gives the histories of three cases. A very interesting article is one by Dr. W. O. Priestly, describing some of the lying-in hospitals in the north of Europe, and referring to the advantages of the antiseptic system in obstetric practice. He gives very fully the methods employed at the Maternity Hospitals at Copenhagen, Helsingfors, and one at St. Petersburg.

The last of the more important papers is one by Dr. Herman "On the Suppuration and Discharge into Mucous Cavities of Dermoid Cysts of the Pelvis." He discusses the course of such cases, the prognosis and treatment, and gives short abstracts of numerous illustrative cases.

Besides these more lengthy communications, there are a large number of interesting shorter articles. The present volume compares very favorably with those of former years.

— Dr. Govan, of Rockland County, stated at the New York Medical Association that he had used aniline oil for the purpose of producing local anæsthesia when laying open felons and performing other minor operations. There was absolutely no pain, even when cutting down to the bone, when the finger had first been dipped for a short time in the oil.

— In Vienna it is customary to give medical men their fees at the end of the attendance, so that the payment is understood to be equivalent to a notice that no more visits are to be paid without further request. A legal case recently turned on this point. A tailor having a child sick with some febrile complaint, sent for a physician, who was unable at that stage, to make a positive diagnosis. He was tendered his fee, and in accordance with the implied understanding, made no further visits. The child was later discovered to have small-pox. On judicial inquiry the physician was acquitted, and the father punished for concealing the character of the disease, and for taking work into his house while the child was sick. We are moved to the reflection, if this method of dismissal was in vogue in this country, how many years, in some cases, the physician would have to remain in attendance.

Medical and Surgical Journal.

THURSDAY, JULY 8, 1886.

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MODERN VIEWS AS TO FUNCTIONS OF THE LIVER.

THE ancients possessed very vague notions as to the functions of the liver. Hippocrates classed bile with atrabile among the four humors, an excess of which engendered disease, and taught the necessity of purgatives to eliminate bile. Galen believed the bile to be excrementitious, and that its ready and constant elimination was demanded in the interest of good health. But Galen had other notions as to the hepatic functions. To him, the liver was the centre of animal heat and of the circulation, and the blood-making organ *par excellence*. It is singular that modern experimentation should have gone far to confirm these speculative views of Galen as to the influence of the liver in both thermogenesis and hæmatopoiesis. To this we shall allude in another number.

To the ancients, bile was purely excrementitious. In the seventeenth and eighteenth centuries, it became known that it was recrementitious also, and the heretofore prevalent notion that this fluid served only a depuratory purpose in the economy, came to be hotly contested. Bertholin, Aselli, and Haller assigned to it an important rôle in promoting digestion. The discovery of the lacteal vessels by Aselli in 1622, and of the thoracic duct by Prequet, in 1647, opened up to the comprehension of physiologists a new way by which chyle might be conveyed from the bowel into the blood quite independently of the portal vein and the liver, and the latter at once fell from its high position as a blood-former to which Galen had raised it.

Haller, from anatomical considerations, reasoned that bile was an essential adjuvant to the digestive process,[1] as the chyme underwent admixture with the fluid before its final elaboration. This view, however, at the beginning of this century, was almost entirely speculative, and in practice, bile was treated in accordance with Galen's notion, as being both noxious and excrementitious. Abernethy was, amongst English physicians, the most conspicuous advocate of the condition called *biliousness*, and was the apostle of blue pill and black draught. In this country, Rush first promulgated the notions of biliousness which have since so widely prevailed.[2] There was a classic train of symptoms: headache, furred tongue, loss of appetite, and nausea — if vomiting occurred, bile was present in the vomited matters — the stools were generally dark and offensive, the urine was loaded with lithates. The clinical observer was struck by the marked relief which, in these cases, always followed the exhibition of purgatives which evacuated bile.

The therapeutics of that period, though indefinite in theory, were quite simple in practice. The word *biliousness*, so much in use, was a convenient one for a time when the knowledge of the digestive, and especially of the hepatic functions, was so meagre and so obscure. It covered a vast amount of ignorance of matters connected with derangements of those functions, while apparently explaining everything, and the pathological state having been affirmed, the "cleansing calomel" and the black draught followed, as a matter of course. It was considered good practice also to precede the mercurial by small doses of tartar emetic, to provoke the liver to empty itself of all the bile that it contained. Nor were practitioners of that day unmindful of the necessity of a spare diet in biliousness, and their treatment (despite the incompleteness of their theory) was often attended by beneficial results; only a "bilious" condition was often diagnosticated and treated where serious organic disease underlay the morbid phenomena.

We have to come down to the century in which we live to find recorded any precise physiological experiments made to ascertain the office of the liver, and especially of the bile. These date from the ligation by Blundell, Brodie, and others, of the common bile duct. It was noticed that animals speedily died after this experiment, killed, as was then supposed, by bile-poisoning. Schwann, however, showed that the establishment of biliary fistulæ in animals, in which the bile was all lost — not retained in the system — was also followed by death, the fatal issue being preceded by rapid emaciation; this proved that the bile had some other use besides being simply excrementitious.

Still later in this century, Bidder and Schmidt performed some notable experiments of the same kind on dogs; they found that the animal lost daily, by the fistula, bile to the amount of one-fiftieth of its weight; if, however, the daily rations of the animal were increased proportionally to this loss, life could be indefinitely prolonged. These experiments, confirmed by Kolliker and Muller, go to show that bile is not indispensable to digestion, but its continuous waste by a fistula is incompatible with life without compensation for this loss by a copious alimentation.[3]

The speedy death of the animals in which the common bile duct was tied does not seem to be due so much to the toxic nature of the biliary ingredients retained, as to exhaustion consequent on the imperfect assimilation of food; many pathological facts bear out

[1] Haller's Elementa Phys. (quoted by Longet).

[2] Bartholow. Pepper's Syst. of Med., Vol. II, p. 965.

[3] Longet's Traite de Phys., Vol. I, p. 288.

this inference. Thus Dr. Budd mentions several cases "in which the passage of bile into the intestines was entirely prevented by complete closure of the ductus communis, and in which, nevertheless, life was prolonged for many months. In one of them, the jaundice first occurred in a woman four months pregnant, who, nevertheless, bore a living child at full period, and suckled it up to the time of her death, which happened when the child was three months old." [4] The greater part of the elements of bile are substances which, when re-absorbed, can be appropriated to nutrient uses in the economy: such are the mucus, the chloride of sodium, the phosphate of lime, the sulphur, the phosphate, carbonate and lactate of soda; the resinoid principles, the coloring matters, and the cholesterine are truly excrementitious.[5]

As for the emaciation which follows the establishment of a biliary fistula, this is a fact that has been determined by many experimenters, and while there is much obscurity on this point, there seems to be good evidence that bile aids the saponification and absorption of fats. It has been proved that jaundiced patients digest fats incompletely, and the same is true, according to Bidder's and Schmidt's very accurate experiments with dogs with biliary fistula; only one-fifth or one-seventh the usual quantity of fat is absorbed. Brodie, Mayo, Tiedmann and Gruelin, Leuret, and Lassaigne, have found the chyle in the lacteal vessels nearly transparent and free from fat under such conditions.[6]

Light may be obtained respecting the offices of the bile when we come to study the sources of that fluid, but this consideration must be reserved for another number.

MEDICAL EDUCATION IN CHINA.

The difficulties in the way of educating the natives of China to any satisfactory degree in the knowledge of scientific medicine are very great, involving, first, the dispossession of their minds of the crudities and absurdities of their traditions on such matters, the necessity of instructing them in one of the European languages in which there is a medical literature, and the securing of clinical opportunities, to say nothing of the task of cultivating in them a truly scientific spirit of inquiry. So far has this been true that even the assistants in the European hospitals in China have never been able to acquire more than a certain manual dexterity. Dr. Myers, however, at the David Manson Memorial Hospital of Takow, Formosa, has had the honor to be the founder of what promises to be a successful as well as most important work in this direction. The *Hongkong Telegraph*, under date of May 20, gives a most interesting account of it. Two young Chinamen have completed, with marked credit to themselves, the first half of a full medical course at this hospital.

[4] Carpenter's Human Phys., Am. Ed., 1862, p. 388.
[5] Longet's Traité de Phys., Vol. I, p. 207.
[6] Ib., Vol. II, p. 311.

The regulations under which it is proposed to grant a certificate of competency, and which we think might in some respects be advantageously adopted by some of the American medical schools are these:—

No candidate will be accepted who is not thoroughly able to read and understand English.

The first examination, to be held not earlier than at the end of the candidate's second year of study, to be on anatomy, physiology, inorganic chemistry, and elementary surgery.

Examiners to be independent medical men at either Hongkong or Shanghai, who are to have the sole conduct of the examination of the aforesaid subjects, and whose decision is to be final.

On passing the first professional examination, the candidate is to study for a further period of two years, at the end of which time he may present himself for examination before another independent Board of Examiners, at either Hongkong or Shanghai, when he will be examined on practice of medicine, midwifery, clinical medicine, clinical surgery, including use of instruments medical and surgical, and bandaging, with materia medica, and pharmacy. On passing this, the examiners will sign the final certificate of competency, which will then be handed over to him.

No candidate can be admitted to the first examination unless he produce to the examiners a certificate, duly authenticated, that he has studied for the space of two years, under a legally qualified medical man, all the subjects he professes, at a hospital or medical school to be approved by the Board of Examiners, and no candidate can offer himself for examination at the final unless he can produce certificates of having studied the professed subjects during the required period.

The certificate of competency, drawn up in English, Chinese, or Latin, is divided into two parts, the examiners for the respective divisions signing immediately under their certificates, the whole confirmed by the Surgeon and Instructor of the D.M.M. hospital, and further authenticated by the signatures of the Hospital Committee. To prevent fraud, the photograph of the holder, stamped with the die of the hospital, is affixed to the diploma, and sundry other precautions are taken.

About two and a half years ago, two promising students from the Central School, Hongkong, named respectively Chan Chun Kai and Li Tsun Fun, volunteered to go to Formosa, and study for the required periods, the hospital offering to find them board and lodging, together with instruction.

They have lately been presented for their first examination before a Board of Examiners composed of surgeons of the British Army and Navy and colonial medical officers with one native who is well educated in chemistry. The requirement of the Hospital that the Board be as cosmopolitan as possible seems to have been complied with.

The *Telegraph* says that it was as formidable a board as could possibly be got together outside of the

United Kingdom, and indeed, looking at the eminence of its members, no less from an official than professional standpoint, it is quite open to question whether a stronger or more authoritative tribunal could be obtained, even in England.

The papers which they submitted in anatomy, chemistry, surgery and physiology, occupying three or four hours apiece, are before us, and would be no light test to the students in the best of our own schools. When we consider that the test was framed and applied by men of such character, having had no connection with the instruction of the students, and in a city remote from where the instruction was given, and that the two candidates obtained in the average of the subjects 72.6 and 70.5 per cent., respectively, we are forced to the conclusion that somebody has been doing pretty good work in the beginning of medical education in China, and are led to the reflection that could a board equally independent of the teaching bodies, and as strict in its requirements, be entrusted with the authority to grant diplomas in medicine in this country, there would be considerable falling off in the number of diplomas which the recurring seasons bring forth.

MEDICAL NOTES.

— The New York Legislature has passed a law for the regulation and control of the practice of veterinary medicine. The law requires the registration of all practitioners, with the evidence of proper qualification afforded by a diploma from some legally incorporated college, or a certificate from an incorporated veterinary society. New York is the first and only State in the Union to recognize and protect this profession, as it was the first to establish veterinary schools, and to organize a State veterinary society.

— The Ohio State Medical Society, at its forty-first annual session at Akron, June 2, 3, 4, 1886, elected the following officers: President, Thomas MacEbright, of Akron; First Vice-president, J. M. Weaver, of Dayton; Second Vice-president, W. S. Battles, of Shreve; Third Vice-president, X. C. Scott, of Cleveland; Fourth Vice-president, Jesse Snodgrass, of Kenton; Secretary, G. A. Collamore, of Toledo; Assistant Secretary, E. C. Bush, of Zanesville; Treasurer, T. W. Jones, of Columbus. The next meeting will be held in Toledo.

— The Kentucky State Medical Society, at its thirty-first annual meeting, held at Winchester, June 23, 24, 25, 1886, elected the following officers: President, M. R. Watkins, of Louisville; Senior Vice-president, J. M. Harwood, of Shelbyville; Junior Vice-president, J. H. McKinley, of Winchester; Permanent Secretary, J. Steel Bailey, of Stanford; Assistant Secretary, T. C. Simpson, of Bardstown; Treasurer, Edward Alcorn, of Hustonville; Chairman Committee of Arrangements, J. C. Brooks, of Paducah. Next place of meeting, Paducah, the third Wednesday in June, 1886.

— *Il Morgagni* (May 29) mentions the following case, recorded by Polyakoff in the *Meditsinskæ Obezpénye*, No. 10, 1885. A robust peasant, aged twenty-seven, of Syarai, Russia, after nine years' married life, became pregnant for the seventh time in June. In the latter period of the pregnancy, the abdomen assumed vast proportions, and on the 1st of March, the woman gave birth to five female fœtuses at short intervals, three presented by the occiput, two by the feet. Each had a sac with separate amnion, but the chorion was common to all. The first fœtus was deformed and still-born; the others lived some minutes after birth. The single placenta weighed a pound and a half, and the umbilical cords were attached to its extremity. Four of the fœtuses were well formed; but the first born was microcephalic, and had not the full number of fingers or toes. The umbilical cord attached to this fœtus had an artery and a vein, but each of the others had three vessels.— *Lancet.*

BOSTON.

— The first class in veterinary medicine was graduated from Harvard University, June 30. It consisted of five members.

— The jury disagreed in the second trial of Stogdale vs. Baker, in which our readers will remember a patient of the Free Hospital for Women brought suit against Dr. W. H. Baker for malpractice, in performing an operation upon her, as she alleged, without her knowledge or consent, in that hospital. A similar suit against the Hospital some months ago, was decided against the plaintiff.

NEW YORK.

— Dr. Joseph Wiener, a well-known German physician, who has practised for many years in New York, has presented to the Park Commissioners a colossal bust of Washington Irving, executed by Beer, of Paris. It will be placed on a pedestal eight feet high, in Central Park.

— A very large rhinoceros, which was recently landed from Europe and taken to the Central Park menagerie, died of pneumonia one week after its arrival there. At the autopsy, which was conducted by Dr. Liautard, it was found that the carcass weighed a little over seven thousand pounds, and the skin alone, eight hundred pounds, requiring eight men to lift it. The thickness of the hide varied from one and a half to two and a half inches. The pneumonic consolidation involved the upper portion of the right lung, and the left was unaffected.

— A warning to amateur doctors, as well as to druggists, is afforded by a case just decided. A German suffering from malaria was informed by a friend that hydrate of chloral would cure his trouble, and accordingly, he purchased some and took a considerable quantity (the dose is not given in the report). He was afterwards ill for six weeks, and claiming that it was caused by the chloral, and attributable to the carelessness of the druggist of whom he purchased it, on the ground that the latter should have warned him

respecting the powerful character of the medicine, he sued the druggist for $2,000 damages. At the trial, it was urged, on behalf of the defendant, that the plaintiff informed him that he knew all about the drug, but the jury rendered a verdict awarding the latter $200 damages.

Miscellany.

THE EFFECT OF BITTERS ON DIGESTION.

Dr. Cheltsoff, Chief of Professor Botkin's clinic, according to the *Lancet* (May 15), thinks that extracts of the so-called "pure bitters," which are usually prescribed with the view of stimulating the secretion of gastric juice and of aiding digestion, so far from having any beneficial effect of that kind, are absolutely injurious, inasmuch as they retard the digestive functions. He has made a series of experiments with extracts of aurantium, gentian, trifolium, absinthium, calumba, cascarilla and quassia, on (1) gastric digestion and the secretion of gastric juice; (2) pancreatic digestion and the secretion of pancreatic juice; (3) the secretion of bile; (4) fermentation; and (5) nitrogenous metamorphosis. The conclusions at which he arrived were that bitter extracts, even in small doses, interfere with artificial gastric digestion, and also with the gastric digestion of animals, but not to so great an extent. Large doses of bitter extracts diminish the secretion of gastric juice, though small doses effect a slight and transitory increase of it, the digestive power of the fluid being, however, in all cases diminished. Bitter extracts have no effect on the secretion of pancreatic fluid, but they, nevertheless, retard hypogastric digestion. The action of bitter extracts on the secretion of bile is various; extract of absinthium, extract of trifolium, and large doses of extract of cetrarin slightly increase it, usually at least, but not invariably; while extract of quassia, extract of calumba, and small doses of extract of cetrarin, have no effect at all. Bitter extracts have no antifermentative effect, and do not hinder suppuration. Lastly, assimilation of nitrogenous substances is diminished by the use of these extracts.

COMMUNICATIONS FROM THE DIPHTHERIA WARDS OF THE CHARITÉ.

Henoch's report on diphtheria, as observed in the wards of the Royal Charité, at Berlin (*Charité Annalen*, Vol. X, p. 490), embodies much interesting and valuable material. Its conclusions are thus summarized in the *Therapeutic Gazette* for June.

Diphtheria increases, as appears from the publications of the bureau of statistics, yearly in Berlin, both regarding frequency and malignancy. The same observations could be made at the Charité. From the years 1876–1883, the number of diphtheria patients increased enormously, namely, from twenty-six to one hundred and eighty-three. About two-thirds of all cases belonged to the period between the second and sixth year of life. The mortality rate is most unfavorable in the first three years of life.

Of three hundred and nineteen cases observed, two hundred and eight died (an enormous percentage). It must be taken into consideration, however, that, aside from a grave epidemic nature and the naturally unfavorable conditions of a large old hospital, only genuine cases of diphtheria are included in the above statement.

Of the three hundred and nineteen cases, one hundred and seventy-four took their course without exceeding the region of the pharynx; of these, ninety-five were cured and seventy-nine died. This great number of cases with a lethal exit, which did not terminate under symptoms of croup, confirm the frequently-noted fact that the very gravest septic forms of diphtheria show no tendency to extend downward, not even when they attain a duration of seven days and more. One hundred and forty-five cases assumed a croupous nature, and were all operated upon, with the exception of seven cases. These seven patients perished, while of the one hundred and thirty-eight operations, only sixteen (about eleven and a half per cent.) were successful. These figures show that in spite of all the dangers which lie in the diphtheritic infection itself, the termination in croup slays the greatest number of victims. Henoch regards the combination of grave septic symptoms with those of croup as the only tenable contraindication to the operation of tracheotomy. Among the causes of death after tracheotomy, we find, besides affections of the respiratory organs mentioned, diphtheritic collapse, erysipelas, and (in three instances), convulsions appearing twelve to forty-eight hours after the operation; for these no valid reason could be assigned, even after the autopsy. Otitis media was observed only in three cases; rhinitis diphtheriticus, however, in very many instances, even in those which terminated in a cure.

The conjunctiva palpebrarum was but rarely, and only in grave cases, affected. Erythemata occurred in three cases, scarlet fever in many, nephritis in some. When, in presence of nephritis, symptoms of cardiac weakness set in, injections of camphor, ether, and strychnine were employed, to which, in some instances, Henoch attributed the recovery. In diphtheritic paralysis, hypodermic injections of one to four mg. of strychnine constituted Henoch's routine treatment. Of prolonged diphtheritis, Henoch noted also a few cases, one of which lasted over two months up to its recovery.

In conclusion, Henoch declines to admit that any of the vaunted specific measures can be regarded as reliable.

SEWAGE FARMING IN ENGLAND.

On June 3d, inst., Dr. Alfred Carpenter delivered an address to the Croydon Farmers' Club, which was of much more than local interest. The sewage of Croydon flows by gravitation to the two sewage farms of Beddington and Norwood. The Beddington farm of six hundred acres disposes of the sewage of 66,000 persons; it has been in operation for more than twenty years; it has never given rise to any nuisance or any disease in the neighborhood; the land has risen from £1 to £9 per acre in value, and is still as capable of doing its work as it was when it was first used. This is a most important tribute to the value of sewage irrigation, and proves that the oft-repeated statement that land soon gets "sick" of sewage is, at any rate, not universally true. The *Lancet* says: "The whole address was full of matter for thought, and should be reprinted as one of the most valuable of the recent contributions to the solution of the hardest of sanitary problems."

"Some years ago we reported on the two Croydon farms, and we gather from the above address that they have undergone no important alteration since that time. There is a great natural fall to help the irrigation, and the sewage can easily be carried to the growing crop of rye-grass before putrefaction has advanced. This, Dr. Carpenter claims, is a great advantage, as he has satisfied himself by experiments that rye-grass is almost carnivorous in its power of assimilating crude sewage. We are inclined to agree in this view, although the evidence adduced is scarcely conclusive. The sewage flows, or did flow at the time of our inspection, over the soil, and not through it, the system being correctly described as surface, as distinguished from downward, filtration. It is wonderful how effective, when properly managed, such filtration is in removing organic matter from sewage, and the long-continued success of the Croydon experiment seems to indicate that it is in some cases, if not in all, the best mode of working. The soil in the Norwood farm is stiff clay, and would be ill-adapted for underdrainage, whereas, even in wet weather, a satisfactory effluent can be obtained from the surface.

"Dr. Carpenter insists with great sense on the necessity of making the sewage irrigation intermittent. There is no doubt that the occasional failure of what is certainly, when practicable, the best method of sewage disposal has often been due to the neglect of this precaution. Even Italian rye-grass, which, as the Rugby Commission long ago proved, is the only crop suited for the continuous assimilation of sewage, requires some time for the digestion of its food; and it is, above all, desirable that a week or more should elapse between the last application of sewage and the cutting of the grass. The economical disposal of the crops is a distinct and almost equally important question. The grass should be cut frequently, before flowering, and the suggestion that a stock and dairy farm should be associated with the sewage farm is well worthy of consideration; it would probably pay, in a good many places."

SOME CERTAINTIES IN THE THERAPEUTICS OF EPILEPSY.

DR. C. L. DANA has written a paper with the above title, which is published in a recent number of the *New York Medical Journal*. His conclusions are summarized in the following statements: —

I. Diet, exercise and proper hygienic treatment rank above all other single therapeutic measures.

II. The bromides take the second rank in the treatment of epilepsy.

All bromides act alike in this disease. If one does not cure another will not. Occasionally changing and mixing reduces the attacks for a time, and benefits the stomach.

III. The best bromides are those of potassium, sodium, ammonium, and hydrogen (hydrobromic acid); possibly we may add nickel.

IV. Bromides may be given in daily doses of ʒj, increased gradually until the attacks are suppressed, or the dose reaches ʒiv to ʒj daily. Few patients can tolerate more than this latter dose. Thorough bromidization should be always tried, if necessary to stop fits, and it may be occasionally repeated. But bromidization is sometimes injurious, even making the disease worse, and it must always be employed with caution.

V. When the fits are suppressed, the bromides should be carefully reduced, but never entirely stopped for at least two years after the last fit.

VI. In most cases, and especially in nocturnal epilepsy, an extra large dose of bromide should be given at night.

VII. It is very important that bromides should be chemically pure, that their use should be continued a very long time, and that their depressing effects should be offset by tonics and all possible roborant measures.

VIII. The best non-specific adjuvants (drugs) to the bromides are potassium iodide (in syphilitic epilepsy), potassium bicarbonate (in lithæmic and rheumatic states), carbonate of ammonium, the hypophosphites, arsenic, iron and quinine.

IX. The other chief adjuvants to the bromides are diet, exercise, a regular life, hydrotherapy, counter-irritation on the neck, and, in the line of drugs, zinc, belladonna, strychnine, valerian and the nitrites. Combinations of bromides with the other drugs mentioned will lessen attacks when bromides alone will not.

X. The best substitutes for the bromides, when these do no good or do harm, are belladonna, zinc, strychnine, glonoin, borax and alteratives.

For nocturnal epilepsy, increase the dose of bromide at night, and add chloral or digitalis. Give also, if needed, strychnine. Raising the head of the bed or making the patient sleep in a chair at night are measures to be tried.

For the status epilepticus give large enemata of chloral, and use emetics and purges. Venesection is often efficacious, morphine is dangerous, chloroform is only palliative, and nitrite of amyl is of little value.

THE CHARACTER OF INORGANIC CARDIAC MURMURS.

SIR JAMES SAWYER, M.D., writes in the *Birmingham Medical Review* for April, regarding the statement that Dr. G. W. Balfour was the first to draw attention to the greater frequency of the inorganic murmur of chlorosis to the left of the sternum, saying that the fact was generally accepted by clinical teachers sixteen years ago. This writer is unable to accept Dr. Balfour's well-known view as to the mitral origin of the systolic murmur of spanæmia, his opinion being that this inorganic cardiac murmur has its position of origin at the orifices of the aorta and pulmonary artery; that it is conducted along both the aorta and pulmonary artery; and that it can be traced more distinctly in the direction of the pulmonary artery than along the line of the aorta, because the pulmonary artery is larger than the aorta in circumference, and because it is nearer than that vessel to the anterior surface of the chest. He is quite satisfied that the auscultatory characteristics of the cardiac murmur of spanæmia, as to position, time, and propagation, are sufficient for its easy and certain clinical recognition.

In most cases of spanæmia, a cardiac murmur is audible. This murmur is not "organic"; it is independent of organic changes in the heart. It is not "dynamic"; it is independent of functional perversion of the cardiac action. This murmur is often heard in anæmic girls, and it has been distinguished by the names of anæmic and chlorotic murmur. In his expe-

rience, it is always basic in site. It is never heard over the cardiac apex. It is always systolic in rhythm, and systolic only. It can be traced upwards and to the right along the aorta, and upwards and to the left along the pulmonary artery, but it is more distinctly propagated along the pulmonary artery than in any other direction. It is not safe to rely upon the quality of this murmur, as some observers have seemed inclined to do. While an anæmic murmur is usually soft and blowing in quality, it is certainly not always so. When this murmur is audible, the cardiac second sound, as heard at the base of the heart, is often preternaturally clear. It is unduly clear without being accentuated, and this abnormal distinctness pertains to both its aortic and its pulmonary valvular elements. The cardiac murmur of anæmia diminishes as the patient's condition improves, and disappears with complete convalescence. It is generally better heard in the erect than in the recumbent posture. There are two associated auscultatory signs of spanæmia: namely, the well-known hum in the neck (the continuous venous murmur known at the "*bruit de diable*.") and a less constant murmur, which is softly blowing and systolic, audible over the larger arteries.

REPORTED MORTALITY FOR THE WEEK ENDING JUNE 26, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Whoopi'g Cough.	Diph. and Croup.
New York	1,439,039	637	282	26.72	14.56	14.24	.96	6.40
Philadelphia	971,363	—	—	—	—	—	—	—
Brooklyn	690,000	251	111	15.60	17.21	.78	1.56	9.25
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	156	43	11.52	23.68	1.92	—	8.32
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	204	117	34.79	11.76	21.56	2.94	3.92
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans, June 5th,	238,000	149	83	26.13	10.05	16.75	1.34	.67
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	305,000	109	—	17.48	20.24	15.64	—	—
Pittsburgh	190,000	121	87	35.69	4.15	23.24	5.81	.83
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	30	5	10.00	43.29	—	3.33	3.33
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	—	—	—	—	—	—	—
Charleston	60,145	57	27	22.75	15.75	10.60	1.75	1.75
Worcester	68,383	23	8	13.05	4.35	8.70	—	—
Lowell	64,051	24	7	20.80	16.64	16.64	—	—
Cambridge	59,660	18	3	16.66	16.66	—	—	11.11
Fall River	56,803	16	7	18.75	6.25	6.25	12.50	—
Lynn	45,861	17	8	—	25.66	—	—	—
Lawrence	38,825	12	4	100.	—	91.63	—	—
Springfield	37,577	18	5	22.22	5 55	11.11	—	5.55
New Bedford	33,393	8	2	—	50.00	—	—	—
Somerville	29,992	—	—	—	—	—	—	
Salem	28,084	—	—	—	—	—	—	—
Holyoke	27,894	13	6	46.14	15.38	38.45	—	—
Chelsea	25,709	4	0	—	—	—	—	—
Taunton	23,674	2	0	—	—	—	—	—
Haverhill	21,795	—	—	—	—	—	—	—
Gloucester	21,713	11	4	—	36.36	—	—	—
Brockton	20,783	4	1	—	25.00	—	—	—
Newton	19,759	4	0	—	50.00	—	—	—
Malden	16,407	2	0	—	50.00	—	—	—
Fitchburg	15,375	8	1	12.50	25.00	—	—	—
Waltham	14,699	3	1	—	—	—	—	—
Newburyport	13,716	2	1	50.00	—	—	50.00	—
Northampton	12,896	—	—	—	—	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 1,803: under five years of age 813: principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 522, consumption 284, diarrhœal diseases 239, lung diseases 146, diphtheria and croup 93, whooping-cough 30, malarial fever 23, measles 22, scarlet fever 20, erysipelas 12, cerebro-spinal meningitis seven, typhoid fever six, puerperal fever one. From malarial fever, New Orleans 10, New York seven, Baltimore three, Brooklyn two, District of Columbia one. From measles, New York nine, Baltimore eight, Charleston three, Brooklyn and Pittsburgh one each. From scarlet fever, New York six, Brooklyn and Pittsburgh five each, Boston two, Worcester and Holyoke one each. From erysipelas, New York six, Brooklyn, Baltimore, Providence, Charleston and Cambridge one each. From cerebro-spinal meningitis, New York four, New Orleans, Springfield and Fitchburg one each. From typhoid fever, Baltimore, District of Columbia, Pittsburgh, Charleston, Lowell and Lawrence one each.

In 20 cities and greater towns of Massachusetts, with a population of 976,894 (population of the State 1,941,465), the total death-rate for the week was 18.02 against 15.49 and 15.26 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending June 12th the death-rate was 17.4. Deaths reported 3,037: infants under one year of age 691; acute diseases of the respiratory organs (London) 216; measles 89, whooping-cough 60, diarrhœa 47, fever 28, diphtheria 18.

The death-rates ranged from 9.0 in Brighton to 34.5 in Portsmouth; Birkenhead 13.1; Birmingham 15.1; Bradford 19.7; Hull 18.8; Leeds 21.5; Leicester 15.3; Liverpool 19.0; London 16.1; Manchester 24.8; Nottingham 15.6; Sheffield 15.6; Sunderland 18.8.

In Edinburgh 22.5; Glasgow 23.0; Dublin 20.8.

In the 28 greater towns of England and Wales with an estimated population of 9,093,817, for the week ending June 19th, the death-rate was 16.8. Deaths reported 2,927; infants under one year of age, 689; acute diseases of the respiratory organs (London) 184, measles 89, diarrhœa 59, whooping-cough 60, scarlet fever 35, fever 29, diphtheria 21.

The death-rates ranged from 10.9 in Birkenhead to 39.6 in Preston; Birmingham 17.8; Blackburn 26.8; Bradford 18.5; Hull 15.0; Leeds 17.5; Leicester 16.1; Liverpool 18.2; London 14.9; Manchester 21.3; Newcastle-on-Tyne 21.2; Sheffield 16.3.

In Edinburgh 20.9; Glasgow 24.5; Dublin 22.9.

The meteorological record for week ending June 26, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, June 26, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, ... 20	30.205	64.5	70.3	51.2	54.0	43.0	59.0	52.0	N.	S.E.	S.W.	4	12	8	C.	C.	C.	—	—
Monday, ... 21	30.234	69.7	78.9	57.2	62.0	43.0	62.0	55.7	W.	S.E.	W.	11	11	12	C.	C.	C.	—	—
Tuesday, ... 22	30.073	69.6	80.3	59.3	66.0	37.0	79.0	60.7	W.	W.	W.	11	9	10	O.	O.	O.	—	—
Wednes., ... 23	29.948	61.9	67.0	57.5	81.0	88.0	88.0	85.7	W.	E.	E.	4	10	12	O.	R.	O.	—	—
Thursday, 24	29.950	58.1	59.6	55.5	96.0	100.0	100.0	98.7	E.	E.	E.	18	16	12	O.	R.	R.	—	—
Friday, ... 25	29.847	61.4	64.1	57.7	100.0	91.0	92.0	94.3	E.	E.	S.E.	6	6	4	R.	O.	O.	—	—
Saturday, ... 26	29.685	68.7	79.3	59.9	88.0	52.0	72.0	70.7	W.	W.	W.	10	27	14	C.	F.	C.	.27	0.17
Mean, the Week.	29.992	64.8	71.5	57.5				74.3											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 26, 1886, TO JULY 2, 1886.

McPARLIN, THOS. A., colonel and surgeon. Granted leave of absence for two months, with permission to apply for an extension of one month. S. O. 146, A. G. O., June 25, 1886.

MAGENDER, D. L., lieutenant colonel and surgeon. Granted leave of absence for two months, to take effect on or about July 1, 1886. S. O. 146, A. G. O., June 25, 1886.

PAGE, CHAS., lieutentant colonel and surgeon. Leave of absence extended ten days. S. O. 146, A. G. O., June 25, 1886.

PROMOTIONS.

BROWN, JOS. B., lieutenant colonel and surgeon. To be surgeon with the rank of colonel, Jan. 24, 1886.

HEGER, ANTHONY, major and surgeon. To be surgeon with the rank of lieutenant colonel, Jan. 24, 1886. Circular, A.G.O., June 28, 1886.

VICKERY, RICHARD S., major and surgeon. Assigned to duty as surgeon in charge of Army and Navy General Hospital at Hot Springs, Ark. S. O. 50, A. G. O., June 30, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JULY 3, 1886.

GREEN, E. H., passed assistant surgeon. Ordered to Naval Laboratory at Brooklyn, temporary duty.

BROWN, J. M., Medical Director. Member of Retiring and Examining Board.

OGDEN, F. N., assistant surgeon. Ordered to "Juniata."

SIEGFRIED, C. A., surgeon. Three months leave abroad.

HALL, J. H. H., passed assistant surgeon. Detached from Museum of Hygiene, ordered to Naval Hospital, at Brooklyn.

WENTWORTH, A. R., assistant surgeon. Detached from "St. Louis," and ordered to "Brooklyn."

DECKER, CORBIN J., assistant surgeon. Ordered to "St. Louis."

BERRYHILL, T. O., assistant surgeon. Ordered to Museum of Hygiene.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING JUNE 26, 1886.

SAWTELLE, H. W., surgeon To proceed to Wilmington, Cal., on special duty. June 22, 1886.

WHEELER, W. H, passed assistant surgeon. Granted leave of absence for thirty days, June 23, 1886.

WILLIAMS, L. L., assistant surgeon. To proceed to Buffalo, N Y., for temporary duty, June 24, 1886.

NORMAN, SEATON, assistant surgeon. To proceed to Cleveland, Ohio, for temporary duty, June 26, 1886.

BOOKS AND PAMPHLETS RECEIVED.

New York Post-Graduate Medical School and Hospital, New York City. Fifth Annual Announcement, with a Report of the Dispensary and Hospital. 1886-87.

Annual Report of the Board of Regents of the Smithsonian Institution, showing the Operations, Expenditures and Condition of the Institution for the Year 1884. Washington Government Printing Office, 1885.

Diseases of the Stomach and Intestines: a Manual of Clinical Therapeutics for the Student and Practitioner. By Professor Dujardin-Beaumetz, Physician to the Cochin Hospital, Member of the Academy of Medicine and of the Council of Hygiene and Salubrity of the Seine, etc. Translated from the fourth French edition by E. P. Hurd, M.D., Newburyport, Mass., President of the Essex North District Medical Society, etc. With illustrations and one chromo-lithograph. New York: Wm. Wood & Co. 1886.

Preliminary Analysis of the Bark of Fouquieria Splendeus. By Helen C. de S. Abbott.

A Few Suggestions for the Preparation of Milk for Infants. By John M. Keating, M.D., of Philadelphia. (Reprint from the Medical News, June 5, 1886.)

Third Annual Announcement of the School of Pharmacy, 1886-87. Purdue University, Lafayette, Ind.

Hospital for Diseases of the Throat. Statement by the Medical Council to the Committee of Management, on the differences that have lately arisen between these two bodies. Action of the Committe.

Fifth Annual Report of the State Board of Health of New York. Transmitted to the Governor, April 9, 1885, Albany. 1885.

Report of a Case of Successful Transfusion in Typhoid Fever. By Wm. S. Whitwell, A.M., M.D. (Reprinted from Pacific Medical and Surgical Journal and Western Lancet, for April, 1886.)

On Some Points of Interest Connected with the Wauklyn Method of Sanitary Water Analysis, Particularly on the Detection of Recent Sewage and the Determination of the Nature of the Organic Matter. By Charles Smart, Major and Surgeon, United States Army. (Reprint from Public Health in Minnesota. Vol. II. No. 3. May, 1886.)

The Address in Surgery: The Present Status of Abdominal Surgery. Delivered at the Thirty-Seventh Annual Meeting of American Medical Association on Tuesday, May 5, 1886. By N. Senn, M.D. (Reprinted from the Journal of the American Medical Association, May 29 and June 5, 1886.)

A Manual of Dietetics. By J. Milner Fothergill, M.D., Edinburgh, Physician to the City of London Hospital for Diseases of the Chest. Hon. M.D. Rush Medical College, Chicago, Ill., Foreign Associate Fellow of the College of Physicians, Philadelphia. New York: William Wood & Co.

First Report of the Anna Jaques Hospital for the Twenty Months ending January 1, 1886. Together with By-Laws, Rules and Regulations. Newburyport, Mass. 1886.

Catalogue of the Albany Medical College. Medical Department of Union University. Fifty-Fifth Session, 1885-86, and Announcement for Session, 1886-87.

Malarial Manifestations due to Traumatism. By Henry C. Coe, M.D., M.R.C.S. (Reprinted from the New York Medical Journal for May 22 and 29, 1886.)

Analysis of the Urine with Special Reference to the Diseases of the Genito-Urinary Organs. By K. B. Hofmann, Professor in the University of Gratz, and R. Ultzmann, Docent in the University of Vienna. Translated by T. Barton Brune, A.M., M.D., and H. Holbrook Curtis, Ph.B., M.D. Second Edition, Revised and Enlarged. New York: D. Appleton & Co. 1886.

Original Articles.

A CASE OF "ULCERATIVE ENDOCARDITIS."[1]

BY GRACE WOLCOTT, M.D., OF BOSTON.

On the 17th of October, 1884, I was called to see Mrs. R. M., a woman forty years of age. She had been a tailoress until her marriage, six years before. She told me that three years previous to this visit she had rheumatism, for which she was treated about one year. She fancied that the remedies given her then increased the menstrual flow very much at first, and finally arrested it altogether. This so alarmed her that she refused to take any more medicine and had had no further treatment up to the time that I saw her, although she had suffered greatly with her heart in the mean time.

She was a slender woman rather over medium height. Her face was very pale, her lips bluish, cheeks sunken. She seemed very nervous and her voice was tremulous.

Her pulse was 108, very irregular in volume and rhythm, and frequently intermitted. The radial pulse was so weak that I could not count it accurately, and from this time I was obliged to take the pulse over the heart's apex.

Temperature and respiration were normal.

The bowels were constipated. The tongue was furred and the breath foul.

She complained of gaseous dyspepsia, and of pain over the apex, accompanied by dyspnœa and palpitation, after any physical exertion or mental excitement.

Physical examination showed the apex beat to be in the fifth interspace, three and one-half inches from mid-sternum, and the area of cardiac dulness to be somewhat increased.

At this examination the heart's pulsations were so weak and irregular that no diagnosis of the valvular condition was made.

The treatment was directed to the heart itself and the sluggish condition of the bowels, as I thought the dyspepsia was secondary. The bowels were unloaded by a simple laxative, and under the influence of the tincture of digitalis the number of pulsations was reduced from 108 to 80 per minute, the beat becoming stronger and more regular.

Auscultation then revealed a double mitral and a double aortic murmur.

The dose of digitalis was then reduced from gtt. x to gtt. iii, three times daily, and she was given a pill of cinchona, iron and gentian, and under this treatment she gradually improved. Two weeks from my first visit her pulse was 74 per minute and regular, the bowels moved daily, and she was able to go up and down stairs and to take long walks without discomfort.

She continued in this condition until November 26th, when after severe nervous excitement she came to my office suffering from palpitation, dyspnœa and dyspepsia, with a pulse which varied from 116 to 128 beats per minute. Digitalis was again administered, and soon all trouble subsided.

On January 12, 1885, I was again called to see her. She had taken a severe cold and had rheumatic pains with constipation, headache, anorexia and vomiting. The pulse was 120, the apex beat very feeble. Her face was extremely pale. She was put to bed and the tincture of digitalis was again given in gtt. x doses, and treatment suitable to her febrile condition was instituted.

January 13th. The pulse rate was reduced to 72 per minute, but she suffered greatly from nausea, and passed a sleepless night.

January 14th. She complained of severe pain over the præcordia. Urine scanty; specific gravity 10.20; one-fifth albumen by bulk and loaded with urates.

A flaxseed poultice was placed over the region of the heart and potass. bitart was administered in small doses every two hours. Sulphate of quinine was given thrice daily and sulphate of morphia at bedtime.

January 15th, A.M. The temperature was 101.8°, pulse 76 and respirations 36. The pain over the præcordia was very much lessened, but the patient complained of severe pain in the right and left lumbar regions. At this time coarse moist râles were present in both lungs, accompanied by a cough with profuse expectoration of mucus.

January 16th. She was rather better, and from that date she gained slowly, the convalescence being interrupted only on January 22d and 23d, when she had chills followed by sweating. No unfavorable symptoms followed, however, and she was soon able to sit up and her appetite returned. She was given a pill of quinine, arsenious acid and gentian, and the digitalis was continued. She expressed herself repeatedly as feeling better than she had felt for more than two years. She was able to go over the stairs and to walk down town and back. I tried to impress upon her many times the necessity for continuing the digitalis, but she felt so well that she did not see the need of it, and soon after I stopped my visits she stopped all medication.

She had similar attacks on March 7th, 15th and 30th. The pulse on each of these occasions was 140 but was quickly reduced by digitalis or caffeine. The period from April 4th to April 19th was one of great comfort. She was able to walk long distances every fine day and to do her housework with perfect ease.

At this time I considered all her discomfort to be due to the fact that the limit of compensatory hypertrophy had been reached and dilatation had begun, the crippled condition of the aortic and mitral valves having probably originated in the attack of rheumatism three years before.

With the exception of a slight pericarditis in January the patient had with each attack, bronchorrhœa, dyspnœa and various gastro-intestinal disturbances, all of which disappeared as soon as the heart's action was fully under control, and invariably reappeared about one week after she stopped medication.

Repeated microscopic examinations of the urine revealed nothing abnormal.

On the morning of April 20th, I was called to see Mrs. M., and was told that the previous evening just after going to bed, she had a violent chill, that the chill was followed by profuse sweating, severe pain in the right lumbar region, and that she had passed a restless and sleepless night. At this time, about eight o'clock A. M., the temperature was 101°, pulse 140 and irregular, respiration 40. Her face was very haggard and anxious. Orthopnœa was marked, and there was a copious expectoration of glairy mucus. The prostration was so extreme that the physical examina-

[1] Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, May 12th, 1886.

tion was necessarily hurried and superficial, but I found on percussion that there was flatness over the lower part of the right chest, and on auscultation mucus and subcrepitant râles over both lungs.

Her stomach was very irritable and it was with difficulty that she retained any food. She was given one of the ammonia salts together with quinine and morphia.

April 21st, there was no improvement and her temperature had reached 103°. I then asked Dr. A. N. Blodgett to see her with me in consultation. A careful examination revealed a slight effusion in the right pleural cavity, œdema of both lungs, and pericarditis friction sounds being present.

The possibility of the existence of ulcerative endocarditis was suggested by Dr. Blodgett. No change in treatment was advised, except with regard to stimulants and milk. These had been tried repeatedly, in various forms, but unsuccessfully; however, we renewed our efforts, but to no purpose.

During the 22d and 23d, she remained in about the same condition except that she grew gradually weaker. On the night of the 23d, she went into a comatose state which lasted until 9 P. M. of April 24th, when she died.

During this illness, which lasted five days, the temperature ranged from 101.5° to 103° there being marked morning remissions and evening exacerbations. The pulse was 140 throughout the attack, and the respirations 40 to 48 per minute.

Orthopnœa was present from the first, but she complained of no discomfort or pain about the heart at any time.

The profuse expectoration was very annoying to her as she could only raise it with great difficulty on account of the prostration. The skin was cold and clammy to the feel and sallow, almost cadaveric in appearance.

Permission to make an autopsy was given at so late an hour, and the time allowed for it so limited, that great haste was required. For this reason the chest only was opened.

Autopsy. Made twelve hours after death. Body fairly well nourished. Rigor mortis present. The lower half of right lung firmly bound to costal pleura by old adhesions; a few recent adhesions were found. The left lung was entirely free. The right pleural cavity contained about a pint of fluid. The left chest was normal. Slight hypostatic congestion over posterior part of lower lobes of both lungs, and both were œdematous.

The pericardial sac contained about ℥iij. of fluid. The heart was increased fully one quarter in size, its walls were hypertrophied and its cavities considerably dilated. On the outer surface of the heart, along the course of the left corronary artery were evidences of inflammation in the shape of little bead-like deposits which were quite firm. Near the apex on the outer surface of the left ventricle was a patch of inflammatory exudate about the size of a small lima bean, which was quite soft. There were several similar patches, though much smaller, at different points of the visceral pericardium, also some cloudiness.

In both auricles and in both ventricles were large ante-mortem clots, the clot in the left ventricle extending into the aorta. The endocardium of the left ventricle showed evidences of recent inflammatory action in the shape of cloudy patches and delicate shreds of plastic matter. The leaflets of the mitral valve showed fibroid induration, the orifice admitting but two fingers.

The ventricular surfaces of the cusps of the aortic valve were the seat of the ulcerative process. In opening the aortic orifice, the incision was made at the junction of the right and left leaflets next the pulmonary artery, dividing one ulcer, the largest one, which measured three-eighths of an inch by one-fourth. It was of a dirty grayish color, and beneath was disintegrated tissue.

The second ulcer was at the junction of the posterior and right cusps.

A little to the left of the middle of the right cusp was a firm mass about the size and shape of a small pea, with beginning ulceration at its apex.

On the posterior cusp were two similar nodules, one of which was slightly softened at the apex, and the other firm.

There were also evidences of inflammation of the aorta extending about an inch and a half from the aortic orifice.

I am glad to lay before the Section the report of this case, with the specimen, for the criticism of its members. It seems to me that the specimen presents *well*, a gradation of the process from the indurated nodule to the open ulcer.

REPORT ON OBSTETRICS.

BY C. M. GREEN, M.D.

THE USES OF ELECTRICITY IN OBSTETRICS, ESPECIALLY WITH REFERENCE TO THE INDUCTION OF PREMATURE LABOR.

SINCE BAYER'S first paper [1] on this subject recalled attention to a therapeutic measure which for a long time had possessed only an historic interest, several observers have embraced every opportunity of testing the efficacy of electricity in its application to obstetrics, and especially to the induction of premature labor. An abstract of Bayer's paper appeared in the *American Journal of Obstetrics* for August, 1885, and the author's method and conclusions are there given in sufficient detail.

A case is reported by WALCHER [2] from the Tübingen clinic, in which the induction of premature labor was indicated in an viiipara whose pelvis was slightly below the average, and whose previous labors had resulted disastrously to the fœtus on account of relative disproportion. Walcher used the constant current of ten elements, introducing the negative electrode (an insulated copper sound with a terminal bulb) into the cervix, and placing the positive electrode over the fundus: each application lasted about ten minutes. Pains were awakened at nearly every sitting and lasted for a varying length of time: the cervix gradually shortened and dilated; and after eleven galvanizations, covering a period of five days, the os was as large as a silver dollar, the membranes bulged, and the labor proceeded. Owing to the transverse position of the fœtus, podalic version was performed. Extraction proving difficult, it was found that the cord encircled the left thigh and prevented the descent of the fœtus: as it was impossible to free the cord, which by this time had ceased to pulsate, it was cut and the

[1] Zeitschrift für Geburtshilfe, u. Gynäkologie, Band xi, Heft 1.
[2] Centralblatt für Gynäkologie, No. 14, 1885.

dead child forthwith delivered. It was then discovered that the cord encircled the child's neck as well, and being of only normal length it was relatively so shortened by these coilings as to cause the dystocia. The fœtus weighed only 7.75 pounds and would doubtless have been born alive but for the accident to the cord. With the effect of the electricity on the uterus Walcher was well satisfied: the mother had a normal convalescence and left the hospital in ten days. It was observed by Walcher as well as by Bayer, that the fœtal movements were usually greatly increased during the galvanization, and perhaps the fatal result to the child in Walcher's case was thus indirectly caused by the electricity leading to fœtal gyrations which resulted in the coilings of the cord.

At the 58th meeting of the Society of German Naturalists and Physicians in Strasburg, 1885, Bayer [3] reported his results in four more cases in which he had used the constant current for the induction of premature labor:

1. In a vpara, in whose previous labors delivery had been effected by version, the children being stillborn, Bayer induced labor at the thirty-sixth week: pains set in after the first application of the constant current, and the os was fully dilated after the sixth. The child was born alive, but died in ten days.

2. Labor was successfully induced with the galvanic current: the child was born alive, but died in six hours of weakness.

3. The os was fully dilated after the seventh galvanization; but the pains continued only during the application, and the method was given up. Three and a half weeks later, however, premature labor set in spontaneously, and the child was born alive.

4. After the ninth application a gray-green ulceration appeared in the cervix: this being healed, another attempt was made, which resulted in a sufficient dilatation of the cervix to admit of operative delivery.

Bayer concludes from his added experience that the constant current awakens pains, dilates the os, and removes strictures of the cervix; but he admits that the results are not uniform. Success is most brilliant when the uterine muscle is in good condition and the cervix is not very rigid. He believes the effect of the current is increased by frequently opening and closing the stream by a rapidly intermittent application of the anode to the abdominal wall: he also uses a double electrode in the cervix. When a number of applications are necessary, the cervix should be frequently inspected, as occasionally ulcerations occur.

Müller, of Berne, discussing Bayer's communication, said that in one case he had had a brilliant success with the constant current; but in his five subsequent cases, after long trial of galvanization, he was obliged to resort to other means in order to awaken pains. Electricity would usually dilate the cervix and there its effect ceased.

Fleischmann [4] has reported from Breisky's Clinic in Prague two cases in which he used the constant current. In his first case, owing to the gradually decreasing irritability of the uterine muscle and to the cicatricial condition of the cervix, galvanism failed to accomplish more than a slight dilatation, and resort was had to other methods. In the second case, having applied the current in the usual manner with only moderate success, Fleischmann tried placing the anode over the lumbar vertebræ and the cathode in the posterior cul-de-sac, using eighteen elements. The result was most satisfactory: effective pains were awakened, and the labor terminated naturally. Applied in this manner, however, the current caused some pain. The fœtus suffered in no way; but its movements were more active.

Apart from its application to the induction of premature labor, Bayer found the constant current of value in regulating and strengthening the pains in labor at term. To promote uterine contractions in the third stage and thus check hæmorrhage, electricity has long been recognized as a useful agent.

In this country, Dr. W. T. Baird,[5] of Albany, Texas, has written an extended paper on this subject, based on an experience of 220 cases. Unlike the authorities previously quoted Baird uses the faradic current, and applies one electrode over the lumbo-sacral region and the other over the abdominal wall, especial care being taken "never to make the application in such a manner as to include the head of the fœtus in the circuit." Baird believes that electricity has a very extended field of usefulness in obstetrics, in short, in any case in which it may be desirable

"1. To modify the pains of labor."

"2. To favor a more rapid dilatation of the os."

"3. To promote more vigorous uterine contractions."

"4. To add tone and strength to all the muscles engaged, and increase their power of doing work."

"5. To abridge the time occupied by the labor."

"6. To prevent shock, exhaustion, and post-partum hæmorrhage."

"7. To insure contraction of the uterus in cases of instrumental delivery."

"8. To act as an auxiliary in the induction of premature labor."

"9. To arrest hæmorrhage and accelerate labor in cases of placenta prævia."

"10. To prevent an undue expenditure of nervous force, in all cases of debility from whatever cause, thus leaving the patient in a condition to secure a speedy and favorable convalescence."

THE ÆTIOLOGY OF FACE PRESENTATIONS.

Hoffheinz [6] in his inaugural dissertation has analyzed the material of the Königsberg clinic for the years 1866 to April, 1884, finding the large proportion of one face presentation to one hundred and seventy-nine of all others,— in all fifty-eight cases. The face presented more frequently in multiparæ than in primiparæ; but the mother's age had no definite ætiological influence. It is undecided whether the premature rupture of the membranes, so frequent in face presentations, and the consequent delay in the first stage are to be ascribed to the faulty engagement of the head, or to contractions of the pelvis, which frequently complicate these cases. The author believes that the possible causes of face presentations can be stated with tolerable certainty as follows:

a. Marked lateral deviations of the uterus.

b. Contraction of the pelvis in its conjugate diameters.

c. Unduly great weight of the fœtus in proportion to its length.

[3] Centralblatt fur Gynakologie, No. 12, 1885.
[4] Archiv fur Gynakologie, Band xxvii, Heft 1.
[5] American Journal of Obstetrics, April, May, and July, 1885.
[6] Centralblatt fur Gynäkol., No. 46, 1885.

d. Prolapse of a hand beside the head.

e. Dorsal displacement of an arm.

It is questionable whether multiple coiling of the cord can cause face presentation; and Hecker's theory, that dolico-cephalism is a primary cause, seems to the author improbable.

MALARIA AND PUERPERALITY.

BONFILS[7] (Thèse de Paris, 1885) has treated this subject very fully, basing his conclusions on an analysis of one hundred and forty cases. Pregnancy and malaria can certainly exist simultaneously without reciprocal influence; but in a certain number of cases this influence is manifest. The effect of the malarial poison on pregnancy is not so much in causing abortion, as many authors believe, (Bonfils found only twelve instances in one hundred and five cases), as in provoking premature labor (sixty-one times in one hundred and five cases). The accidents are oftener occasioned by progressive malarial cachexia, than by visceral and placental congestions produced by the intermittent paroxysms; this influence manifesting itself in the death of the fœtus (observed twenty-four times in one hundred and five cases), and in fœtal malnutrition, whereby the weight and length fall respectively, in the average, one pound and four inches below the average weight and length of healthy infants: in only nine cases in one hundred and five did fœtal death occur in apparent consequence of the intermittent paroxysms. Intra-uterine infection of the fœtus by the malarial poison is rarely observed. On the other hand it is still debatable whether or not the poison can be transmitted to the newborn through the mother's milk.

The extent of malarial influence on labor is not yet clearly demonstrated; but the author asserts that post-partum hæmorrhages are often observed, that uterine involution is retarded, that the lochia remain bloody for a longer time, that the milk is less abundantly secreted and of poorer quality. While pregnancy and labor are not necessarily secure from acute malarial attacks, it is in the lying-in period above all that they appear. In the first three weeks, and especially during the first days, acute attacks are most frequently observed. Malarial cachexia often makes rapid progress in this period and gives rise to progressive pernicious anæmia.

THE PROPER RELATION OF VERSION AND EXTRACTION IN POINT OF TIME.

It has been held by some authors that after version from either transverse or cephalic presentations it is better to wait for a time before proceeding to the manual extraction. Or in other words, that in cases in which malpresentations require correction, it is better to do pelvic version (externally or bimanually) before the os is fully dilated and then wait for full dilation before proceeding to the extraction, if such interference is necessary. With a view to demonstrating the inadvisability of this separation of the two operations in point of time, WINTER[8] has analyzed the material of the Royal University Clinic in Berlin from 1876 to 1884 and collected three hundred and ten cases of simple, uncomplicated transverse positions of full-term living children: from the examination of this material he has come to the following conclusions:

1. The teaching, that version and extraction should not be performed in immediate succession, arose from the false supposition that the footling case produced artificially by version has the same prognosis as the same presentation occurring naturally.

2. The earlier and generally adopted practice of performing version as soon as possible after the escape of the liquor amnii rests on the fear of the intra-uterine death of the fœtus and especially of the increased difficulty of version after longer waiting.

3. Fœtal death does not occur alone from the premature escape of the liquor amnii, but only when tympanites uteri, unduly powerful pains, or tonic uterine contraction complicate the case.

4. Version cannot be rendered difficult by waiting until the dilatation of the os, for the dangerous thinning of the lower uterine segment does not occur until the expulsive stage; nor again does the ordinary clonic uterine contraction cause trouble in turning. Tonic uterine contraction, however produced, is a pathological condition, which is always to be avoided.

5. In normal cases children bear version and immediate extraction with safety.

6. Waiting after version before proceeding to extraction is very dangerous for the child, which often dies in utero, or is saved only by speedy extraction.

7. The causes of fœtal death are injuries to the cord during the version, separation of the placenta, and entrance of air into the uterus.

8. Whether the membranes are ruptured or unruptured version should not be performed until the extraction can be immediately proceeded with.

9. Only a definite indication, such as placenta prævia, prolapse of the cord, beginning infection, imminent asphyxia of the child, great thinning of the lower uterine segment, pure inertia uteri, demands early version, that is, before the dilatation of the cervix, and then for the most part in the interest of the mother.

[7] Revue des Sciences Médicales, April, 1886.

[8] Zeitschrift für Geburtshilfe und Gynäkologie, xii, 1. Centralblatt für Gynäkologie, No. 7, 1886.

Clinical Memoranda.

A CASE OF EXTRA-UTERINE PREGNANCY.[1]

BY E. A. KEMP, M.D.

AT half-past eleven A. M., on the 25th of March, I was called to see Mrs. P., a lady about twenty-six years old. Had been married about three months. On my arrival, I found the patient lying on the bed; pulse not very weak, and still not as strong as you would expect in a healthy woman. Heart sounds normal. There was a pallor about the face, how marked I could not say, as I had never seen the patient before. Hands and feet were quite cool. I gleaned the following history from her mother, who had come in a short time before the patient's illness. She had always been healthy, and was chatting and laughing with her mother and another lady when the grocer called. She arose rather hastily, went to the door, transacted whatever business she had, and started to return. While in the entry, she came near falling, when her mother assisted her to the bed in an adjoining room. She complained of an occasional pain in the region of the stomach, saying that it would pass to the right shoulder. There was belching of wind; in fact, it seemed like a case of

[1] Read before the Essex South Medical Society, Danvers, Mass.

indigestion, and as I had seen a lady the night before who had fainted and was nearly pulseless, which proved to be a case of indigestion, I could hardly feel alarmed at the symptoms developed by my patient.

After the application of heat to the extremities, and administering remedies which seemed appropriate, she was very comfortable, and when I left, seemed as well as one could expect under the circumstances. About eight in the evening, the husband came to my office, and said that the pain in his wife's stomach had not entirely ceased, and thought I had better see her, so I immediatly went home with him. Found the patient quite pale, hands cold, but feet warm. Some pain at intervals in the region of the stomach, radiating to right shoulder. Heart sounds and pulse quite weak. In fact, she had every appearance of a woman losing blood.

A careful examination revealed nothing. Both herself and mother informed me that she had been regular in her monthly sickness, and that the regular monthly flow had ceased only a day or two before. I watched her for an hour, doing whatever the case seemed to demand by stimulants, etc., but everything that was done apparently did no good. The case seemed very critical, and I kept thinking, "I am afraid she will die"; but the thought would come, how can she die without a cause, and what is the cause? I requested the husband to go to Dr. Frost's, about one-fourth of a mile away, and ask him to come and bring some ammoniac, as I had used my last. During his absence the patient was pulseless at times, and one of the heart sounds only could be heard; but under the administration of hypodermic injections of whiskey, both heart sounds strengthened so as to be heard distinctly, and the pulse greatly improved. After Dr. Frost's arrival, we worked on for an hour and a half without any apparent benefit, when Dr. Carlton arrived; but our united efforts, by means of stimulants, both by mouth and hypodermically, with hypodermic injections of digitalis, together with inhalations of nitrite of amyl, all seemed to be of no lasting benefit, and at 2 A. M. the patient died; and we could only say that she apparently died from loss of blood, but from where the most careful examination failed to reveal.

About twenty hours after death, a post-mortem examination was made. There were present Drs. Frost, Carlton, and Atwood.

Rigor mortis was present. The surface was unusually blanched. On opening the abdominal cavity, a quantity of dark fluid blood immediately escaped; a large quantity of fluid blood remained in the lower part of the abdominal cavity. Both iliac fossæ were completely filled with clots. On a careful removal of the clots, we found a case of tubal pregnancy, with rupture. I should judge the pregnancy had advanced to the sixth week. I show you the specimen, which gives you a good idea of the case. It seems to me that the interesting features of the case are these: The woman's perfect health, without the least disturbance as regards pregnancy, that is, without symptoms. The regularity in her monthly sickness (at this time the monthly flow had just ceased). Also the early rupture.

The following report upon the specimen was made by Dr. W. F. Whitney, Curator of the Warren Anatomical Museum:

"The specimen consisted of the uterus and adnexa.

"In the right ovary was a corpus luteum about 1.5 cm. in its longest diameter, having a sinuous, linear, yellow, central portion surrounded by dense, whitish, connective tissue.

"Projecting from the upper part of the uterus, at the place where the right Fallopian tube joins the fundus, was a tumor the size of a hen's egg; at the upper anterior aspect of this the wall was exceedingly thin, and had evidently ruptured. The part of the wall towards the uterus was thicker, and composed, in part, of uterine tissue. The interior of the tumor was filled with a shreddy mass, recalling placental tissue. (It was reported that a small, embryonic structure was found attached to this by a fine thread at the time of the autopsy).

"The lining membrane of the uterus was smooth, velvety, and much thickened. The walls, however, were but little increased in thickness, nor was the cavity enlarged."

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

May 12th, 1886.

Meeting called to order at 8 o'clock, by Dr. F. I. Knight, Chairman. The records of the last meeting were read in summary by the Secretary and approved. Previous to the papers of the evening, the Chairman announced that Dr. Bowditch desired to address the Section.

Dr. Bowditch said that he had three articles which he would present to the Section, two of which would be hereafter placed in the portfolio of the Boston Medical Library. They all held important relations with the history of medicine, and he thought they would be interesting to the members.

First. A splendid lithograph of Vesalius, "The Father of Modern Anatomy." No one could look at it without feeling that if Vesalius had not been great in our profession, he would have been great in any walk of life. One could believe from his fine commanding brow and calm look that he might have been a statesman. He was born in Brussels in 1514, and died in 1564 of starvation in the Island of Zante, where he had been shipwrecked on his return from a pilgrimage to the Holy Land. Accused by the minions of the Inquisition of having begun to dissect a man while the heart was still palpitating, he was saved from death only by the favor of Philip II, to whom he was chief surgeon. He had taught anatomy at Pavia, Bologna, and Pisa from 1540 to 1544, and had large crowds of students to hear him. His immortal work "De Corporis Humani Fabrica," in seven volumes, was first printed at Basle in 1543. Boerhaave and Albinus published another edition in folio in 1725 at Leyden.

The second article shown was a pharmacopœia published at Cologne with Petrus Holzeming as editor, a worthy man doubtless, but now wholly unknown to fame, so far as biographical dictionaries are able to tell us. It is a thin folio volume, with large, well-engraved title-page. At the top are the armorial bearings of Cologne. Below is a view of the city. On the sides are four physicians, namely, St. Luke, St.

Parataban, St. Agmar, and St. Damianas. The last three suffered martyrdom in the fourth century. St. Connes was for many years the patron saint of physicians. A church dedicated to his memory in the 13th century, was taken down in 1832. At one time the fraternity of priests of St. Connes taught medicine there. Ambroise Paré in the 16th century gained his title of Master Surgeon from that Faculty. The pharmacopœia is a most interesting work, as illustrative of the absurd lengths our fathers in medicine went in the number of articles put in their prescriptions. Generally speaking there were one or two active ingredients, as aloes, opium hyoscyamus, etc., in a prescription, and the remainder were inert. The most remarkable in the book is an electuary powder. It contains fifty-four different ingredients and was styled "Pulvis Subtilissimus."[1] In this prescription, human nature had evidently gone to the utmost extreme of over medication. The whole book with its absurd remedies seems to prophesy homœopathy, with its single and equally absurd infinitesimals. Man never goes toward the truth in a straight line, but in a pendulum course.

Third. A photograph of a painting by Watteau, caricaturing in pencil after Moliere had done so with his pen, the absurdities of the faculty and the extremes to which the public were led by eulogiums on the use of the "clystere." Moliere wrote his "Malade Imaginaire" for the opera of the king and noblesse. Watteau, coming after him a few years, painted the scenery on the same stage. The painting which the photograph represents is in the museum at Lille in France. It shows an immense army of people coming to meet the great Doctor, who is dressed in fur-bordered robe, with feathers in his hat. He stands erect with an immense gravity and important look. His right arm extended as if giving decided directions in regard to a patient who is about to have an enema given to him. An immense crowd looking like an army covers the background. Each person armed with a huge syringe, instead of the usual trappings of war. Upon the top of the staff, bearing the color of the regiment, instead of the imperial eagle appears an upturned chamber utensil which shall be nameless. Various groups are seen in the foreground, of a most realistic character. A lady with glutei and legs exposed, and two negroes administering an enema. A lady with her lapdog on her arm, and her husband are apparently leaving the scene, but are followed by an attendant of the doctor, armed with a syringe, who is evidently entreating her to allow him to give her an enema. On the other side of the picture is a burly postman, set upon by two attendants, one of whom has pulled the hat over the eyes of the struggling victim, while the other is preparing to give him the injection, which one sees the postman will not readily submit to. But most comical of all is a poor, evidently costive dog, with curved back, plainly striving in vain for a dejection, and mutely appealing for an enema for his relief. One has only to read the "Malade Imaginaire," of Moliere, to get a full explanation of this gross caricature. At the same time it shows the absurd length to which our fathers went in regard to the rectum, as according to the pharmacopœia above described, they had a half century or more before, filled the mouths of their patients with their subtle powders. Who can wonder at homœopathy and electicism in consequence of such nonsense.

DR. S. W. LANGMAID moved a vote of thanks to Dr. Bowditch for his very interesting remarks, and his valuable and unique gifts to the Section.

The motion was put by the Chairman, and carried unanimously.

DR. GRACE WOLCOTT read a paper on,

A CASE OF ULCERATIVE ENDOCARDITIS.[2]

DR. F. C. SHATTUCK, upon being invited to open the discussion, expressed his interest in the well reported case which had just been read. The pathology of endocarditis in general presents problems, at once interesting and difficult, to the solution of which we thought ourselves nearer some years ago than we do to-day. Until lately the real distinction between ulcerative and simple endocarditis was thought to lie in the presence in the former of micrococci; and the term diphtheritic endocarditis was proposed to characterize the process at one time. To these organisms the infectious nature of the affection was attributed; to them it was thought to be due that emboli excited suppurative inflammation about their points of lodgment. This distinction now fails us since Klebs, Köster, and others find micrococci in the products of any and every endocarditis, without having succeeded as yet in distinguishing between those accompanying forms which are clinically so different. Anatomically the difference is rather one of degree than of kind, and hence Osler prefers the term malignant to the term ulcerative. In an endocarditis of malignant course there may be no more ulceration than in a benign case of warty endocarditis; and, on the other hand, there may be well-marked ulceration from very different causes. The main anatomical distinction is in the different results of embolism; as to the pathological distinction we are at present ignorant; the clinical distinction is more clearly marked. Thus we are led to the eminently practical question of diagnosis. In some malignant cases the diagnosis may be made with tolerable certainty. We know that the process is especially liable to attack valves which are the seat of changes dependent on previous disease, notably sclerosed valves; and hence grave typhoidal or pyæmic symptoms, for which no other cause can be assigned, in an individual known to be the subject of old valvular disease are, to say the least, suggestive. Similar symptoms with indications of embolic abscesses in a case of acute rheumatic endocarditis are, in like manner, suspicious; but this association is, according to Osler, rare. In cases of primary malignant endocarditis the diagnosis may be reached by a happy guess, but is generally beyond our powers. The general symptoms vary very widely in different cases; simulating typhoid fever, pyæmia, malaria, or some other general infectious disease; the leading symptoms may be cerebro-spinal; symptoms pointing to the heart may be wanting or excessively obscure. If the heart was previously healthy the organ is not enlarged and the course of the disease is usually too short to allow it to become so; while a souffle can easily be attributed to so called dynamic causes. A case which recently occurred at the Massachusetts General Hospital, in the service of Dr. Abbot, the autopsy on which the speaker attended, well illustrates the impossibility of diagnosis at times. A woman

[1] Duke Don Nicholas, so called because prepared by an Abbot for the son of Don Nicholas.

[2] See page 25.

died after an illness of ten days or so, with ill-defined but rather typhoidal symptoms and no indication of cardiac disease. Primary ulcerative or malignant endocarditis limited to the tricusted valve with emboli in the lungs was found. The speaker had seen two or three cases in life in which he had suspected this form of disease, but had not been so fortunate as to secure an autopsy to overturn or confirm the diagnosis. He congratulated Dr. Blodgett both on the diagnosis in the case just reported and on its verification.

Dr. E. G. Cutler expressed much interest in the case reported. He had never seen an instance of ulcerative endocarditis at autopsy, but had had, a few years ago, a patient under his care with the following history: a child of six had passed through an attack of mumps, under another physician, two other children were sick with the disease about the same time. Some days afterwards the child, having been all the time ailing, was seized with chills, fever, pain in the præcordia, and restlessness. There was found to be a loud systolic murmur at the apex. The patient got worse, the circulation in one of the arms suddenly ceased, accompanied by pain and swelling. The femoral artery in one of the legs became plugged soon after, associated with severe pain. The murmur ceased before death, which occurred about a week after the patient was first examined.

Dr. H. I. Bowditch stated that he had never seen a case of this disease in his life, and that the condition was unknown to him. The specimen was a most interesting one, and showed a new source of danger in diseases of the cardiac tissues. Dr. Bowditch asked if the diagnosis of ulcerative endocarditis were made before death, and if so, on what grounds was this opinion based?

Dr. Blodgett replied that he had the privilege of examining the patient before death, and from the history of a long-continued organic disease of the heart which had been studied by careful physicians for many months, to which a new and most serious complication had been suddenly added, he was led to review the conditions to which this unexpected change might be due. The character of the symptoms observed at this time was essentially that of acute septicæmia; that is, there was acute pain in various parts of the body which were not before the seat of disease. The pulse and temperature were very high, the patient was in a condition of stupor, almost amounting to apathy, and resembled the state called "typhoid" in many asthenic diseases. The array of symptoms thus calling attention to a condition so closely approximating to that of surgical pyæmia, it seems only a short way to the diagnosis which alone would sufficiently explain the symptoms. The autopsy was of necessity very hastily made, and gave no time to examine the other visceral organs, which might possibly have shown other interesting pathological conditions connected with the state of the heart.

Dr. Shattuck observed that in any case of endocarditis we may have embolic formations in the blood-vessels. In benign endocarditis the emboli do not occasion suppuration, while in the form of endocarditis which we may for the sake of comparison call "malignant," the emboli are followed by suppuration, and the appearance of a train of clinical phenomena bearing considerable resemblance to septicæmia.

(The remainder of this report will be published in connection with the paper to which the discussion refers).

ASSOCIATION OF AMERICAN PHYSICIANS.[1]

SECOND DAY.— AFTERNOON SESSION.

PERI-UTERINE INFLAMMATION,

by William Polk, M.D., of New York.

The purpose of the paper was to consider those masses found about the roof of the vagina, generally to the sides of the uterus, sometimes behind, rarely in front. These have been described under the head of pelvic cellulitis and peritonitis, and have been the cause of much controversy. The speaker considered these masses to be the result of salpingitis due to uterine disease. Under ordinary circumstances, the disease travels by way of the tubes, but in septicæmia it travels by all routes. Fifteen cases were reported in which the symptoms and signs ordinarily ascribed to pelvic cellulitis and peritonitis were present, but in which opening of the abdomen showed salpingitis, peritonitis, and ovaritis, there being no thickening of the cellular tissue. Except in those cases in which there was shortening of the ligaments, the uterus presented about the normal mobility. Pelvic abscess, in the writer's opinion, was, in the majority of cases, of tubal origin.

As regards the causation of these masses, anything that will produce endometritis may produce salpingitis and cause these masses.

Prognosis. Death is the exception. This result is to be expected when septicæmia is the cause of the trouble, or when there is a depraved state of the system. The occurrence of abscess is usually followed by recovery. If the mass remains, the permanent cure of the case is doubtful.

In chronic cases, after all other measures have failed, operation may be performed. The tubes need not necessarily be removed. The tearing of the adhesions may be sufficient.

Conclusions: Salpingitis is neither a new nor a rare disease.

It is, with peritonitis, the most common form of inflammation about the uterus, holding, in point of frequency, almost the same relation to the extra-uterine surface as does endometritis to the intra-uterine.

The majority of cases get well.

A small number do not get well, and these are capable of causing such danger and distress to the patient, that abdominal section and removal of the uterus and ovaries is a necessity.

AN EXPERIMENTAL STUDY OF GLOMERULO-NEPHRITIS,

by W. H. Welch, M.D., of Baltimore.

Of the various processes which make up the pathological anatomy of Bright's disease, the two which, at present, awaken the greatest interest, and the study of which promises the most fruitful results, are probably the changes which take place in the glomeruli, and atrophy and necrosis of the epithelial cells.

The questions which have not as yet received full and satisfactory answers, are, what is the origin of the cells which often, in nephritis, occupy the space between the glomeruli and the capsule of Bowman? Does migration of the white corpuscles or diapedesis of the red corpuscles take place through the glomerular capillaries? What relation as to frequency and intensity do changes in the glomeruli play in the pathology of Bright's disease? In expectation that light might

[1] Concluded from page 14.

be thrown upon these questions, the speaker had experimented on rabbits and white mice, by the production of acute cantharidal poison. A concentrated solution of cantharidin in acetic ether was employed by subcutaneous injection. After a toxic dose, the urine diminishes, and is finally suppressed. It contains albumen, hyaline casts, and a large number of leucocytes and red blood-corpuscles.

Microscopical examination of the kidney in the rabbit shows here and there foci of infiltration, with small, round cells, doubtless migrated white blood-corpuscles. The epithelium of the convoluted tubes is, in places, normal in appearance; in other places it is swollen, and often the inner part of the cells is broken off, appearing as a granular mass in the lumen of the tube. The most marked change is found in the malpighian bodies. In the greater number of these, there is between the glomerulus and Bowman's capsule a wide space, partly or wholly filled with cells. These are larger than white blood-corpuscles. They are frequently arranged in a crescentic mass. These appearances are similar to those described in glomerulo-nephritis in man. In the latter case, these cells are attributed to the swelling and desquamation of either the capsular or glomerular epithelium. Such explanation does not hold in the present case. The epithelium of the capsule is often intact, and the glomerular epithelium may retain its normal position. More frequently, it is swollen and may desquamate. There are no appearances which justify the derivation of the greater number of the cells from the epithelium of the glomerulus. These cells cannot be regarded as white blood-corpuscles changed by the action of the poison, for the cells circulating in the blood are exposed to the same poison. These cells may be derived from the epithelium of the convoluted tubes in immediate communication with the malpighian bodies. The cells in the capsular space are identical with those in the convoluted tubes. At times, there can be found groups of cells arranged in the form of a ring, with a central space, just like the epithelium of the uriniferous tubules.

It is difficult to decide whether the cells occluding the glomerular capillaries in acute and chronic Bright's disease are white blood-corpuscles or endothelial cells, but the speaker inclined to the view that at times they are detached endothelial cells. Swelling of the endothelium, and accumulation of cells in the glomerular capillaries appears to be a nearly constant lesion in the acute nephritis of scarlet fever. In one case examined, this was almost the only lesion in the kidney. Occasionally pathologists meet with kidneys in which the apparent changes do not explain the symptoms. In such cases, careful examination of the glomerular capillaries should be made. It is difficult to think of any lesion of the kidney more destructive to its function than occlusion of the capillaries.

While disposed to attach much importance to the changes in the glomerular capillaries, we are not justified in asserting that these changes constitute the primary and essential cause of Bright's disease. They are coördinate with other lesions.

He suggested that instead of the term glomerulo-nephritis, the term glomerulitis be used. The form characterized by accumulation of the cells between the glomerulus and Bowman's capsule may be designated desquamative glomerulitis, and that characterized by the accumulation of cells, or by other changes within the capillaries, may be called intra-capillary glomerulitis.

BICUSPID CONDITION OF THE SEMI-LUNAR VALVES, AND ITS RELATION TO AORTIC VALVE DISEASE,

by WILLIAM OSLER, M.D., of Philadelphia.

A bicuspid condition may be said to exist when two of the three sigmoid cusps have more or less perfectly fused, so that the arterial orifice is guarded by only two segments. The points alluded to were, first, the frequency of the condition. The abnormality is a well-recognized one. Dilga recently collected the statistics, and has found sixty-four cases of this condition in the pulmonary artery, and twenty-three in the aorta. This statement gives an incorrect idea of its frequency in the latter vessel. In over eight hundred autopsies at the Montreal General Hospital, there were eighteen cases, seventeen in the aortic valves alone; in one, pulmonary and aortic segments were both involved. In one hundred and ten cases of valvular disease of all kinds, there were fifty-seven in which the aortic valves were affected, so that this condition existed in over thirty per cent. of all cases of aortic valve disease.

Second, the clinical history. The part played by this condition in aortic valve disease is illustrated by the history of the eighteen cases. Two died suddenly from cardiac syncope. Twelve presented the picture of chronic aortic insufficiency, and in four the lesion was accidentally found, death having resulted from other causes. In sixteen cases, there was hypertrophy of the heart, chiefly of the left ventricle. With the exception of one case, a fœtus at the eighth month, the patients were adults. The ages ranged from twenty to sixty years. This contrasts in a marked manner with the history of this defect in the pulmonary artery. A great majority of the instances present other serious anomalies of development, and death takes place before puberty.

Third, the mode of origin of the lesion. Unquestionably, the majority of the cases are congenital, and result either from faulty development or a fœtal endocarditis. The former view seems the more probable (a) from the fact of the existence of the condition in fœtal life without any traces of endocarditis; (b) the occurrence of all grades of the condition from fusion of the attached terminal margins of contiguous segments to perfect fusion of the cusps, with scarcely an indication of the line of union; (c) a comparison between the size of the conjoint and single cusps indicate that the anomaly must take place at a very early period of development, as in some instances, the single valve equals, or is even larger than the fused segments, while in others the slight inequality in size is scarcely consistent with the view that a fœtal endocarditis, subsequent to the formation of the valves, had caused coalescence of the curtains. We do not know accurately the details of the development of the sigmoid valves, but Tonge's interesting observation on the chick showing that two of the cusps are formed before the third, may have some connection with the production of this anomaly.

THE BACILLUS OF TYPHOID FEVER,

by GEORGE M. STERNBERG, M.D., U. S. A.

Recent researches support the view that the bacillus described by Eberth in 1880, bears an etiological relation to enteric fever, although the final proof that

such is the case, is still wanting. This proof would consist in the production in one of the lower animals of the specific morbid phenomena which characterizes the disease as it occurs in man, by inoculation of a pure culture of the bacillus. Thus far, we have no evidence that any one of the lower animals is subject to the disease as it occurs in man; but Frænkel and Simmonds have shown that the bacillus of Eberth is a pathogenic organism and that pure cultures injected into the peritoneal cavity of mice or into the circulation of rabbits, causes the death of these animals and that colonies of the bacillus are found in the spleen, which resemble in every respect the colonies found in the spleen and other organs of typhoid cases.

The researches of Eberth, Meyer, Gaffky, Frænkel and others, indicate that this bacillus is constantly present in the intestinal glands and in the spleen of typhoid cases, and Gaffky has shown that pure cultures may be obtained from the spleen, even in cases in which a microscopical examination fails to demonstrate the presence of the characteristic colonies.

The researches of Brieger show that a toxic ptomaine is produced as a result of the vital activity of Eberth's bacillus, when it is cultivated in albuminous culture media. This injected into guinea pigs, causes salivation, diarrhœal discharges, debility, dilated pupils, rapid respiration, and death at the end of twenty-four or forty-eight hours.

Demonstrated facts relating to the propagation of typhoid fever, indicate that it is due to an organism which is capable of multiplication external to the human body in a variety of organic media at comparatively low temperatures. Eberth's bacillus complies with these conditions, in consideration therefore, of its constant presence and the absence of any other organism as shown by microscopical examination and culture experiments, the inference seems justifiable in the present state of science, that this bacillus bears an etiological relation to the disease in question.

A CLINICAL REPORT OF NINE CASES OF HEMIANOPSIA,

by DR. E. C. SEGUIN, of New York.

He presented an abstract of nine cases of lateral hemianopsia due to cerebral lesion, and called attention to the following points of interest:

First. Of the nine cases, five had right lateral hemianopsia, and four left lateral hemianopsia.

Second. Three of the cases of right-sided hemianopsia presented the following association of symptoms: hemianopsia, right sided hemiparesis with post-paralitic ataxia and partial hemi-anasthæsia. Two of these cases also exhibited ataxia without other aphasic symptoms. It is interesting to note that all cases of right-sided hemianopsia do not have ataxia, and also that post-paralytic ataxia is not always accompanied by hemianopsia, though probably this is more common than is generally supposed.

Third. The six other cases were practically cases of pure hemianopsia, that is, there were no paralytic or sensory symptoms or aphasia indicating extensive cerebral disease.

In the first category the lesion is probably placed on the outer edge of the thalamus, so as to involve the fasciculus opticus and the posterior division of the internal capsule. In the second category, the lesion is quite certainly further back or in the white matter of the occipital lobes.

Fourth. In two cases of the second category, marked and increasing weakness of both legs was present, a symptom perhaps due to the upward and forward extension of a tumor toward the para-central lobule.

Fifth. A very peculiar symptom in two cases of the second category, and one which the author thinks is new, was the occurrence of hallucinatory images for a short time in the darkened half-field. This is a symptom of irritation and analogous to the convulsive movements which sometimes precede paralysis of a limb when its motor centre is being destroyed by disease.

Sixth. Ophthalmoscopic changes were observed in only one case of the second category. In this case, neuro-retinitis developed in both eyes under the physician's observation, about one month after the first visit.

Seventh. In no case was the hemiopic pupillary reaction of Wernicke, observed.

Eighth. A special pathological question came up in one case of the second category. In 1883, the patient had glaucoma with irregular hemiopic defect, first in one eye, and later in the other, and yet only fourteen months later was pure geometric hemianopsia found. Could glaucoma produce this? The speaker thought not; being unable to conceive how intra-ocular pressure could so affect the retina and optic nerves as to produce a strictly hemiopic defect in dissimilar halves of each eye. A central lesion is quite certain.

Ninth. A very puzzling point is the perfection of central vision in these and other cases of central hemianopsia. The vertical line always passes by the point of fixation, no matter on which side the blindness is. We must conclude that the macula is not involved in the loss of function, and the question arises. can the macula have a double innervation from the visual centre? This point the author intends to study thoroughly.

The speaker also exhibited specimens illustrating the seat of lesion in certain cases of hemianopsia.

DR. HENRY FORMAD exhibited specimens of kidneys demonstrating some peculiarities of

CYANOTIC INDURATION OF THOSE ORGANS.

This condition is produced by anything which interferes with the circulation through the kidneys. The shape of the kidney where the cyanotic induration results from alcoholism is rounded and shortened. The kidney presents a "pig-back" appearance. Where the cyanotic induration results from heart disease, the shape of the organ is not altered, as the condition takes place gradually.

The following papers were read by title:

NOTES OF A CASE OF HEPATICO-BRONCHIAL FISTULA,

by DR. J. E. GRAHAM, of Toronto.

PANCREATIC HÆMORRHAGE AS A CAUSE OF SUDDEN DEATH,

by DR. F. W. DRAPER, of Boston.

PERNICIOUS ANÆMIA,

by DR. A. JACOBI, of New York.

A CASE OF HODGKINS' DISEASE,

by DR. F. FORSHEIMER, of Cincinnati.

A vote of thanks was tendered the government officers and the profession of Washington for courtesies extended.

Adjourned.

NEW YORK COUNTY MEDICAL ASSOCIATION.

STATED meeting, May 17, 1886.

EXTRA-UTERINE FŒTATION, WITH ILLUSTRATIVE CASE.

DR. WILLIAM T. LUSK exhibited the specimens and related in detail the history of a case of extra-uterine fœtation, which, he said, presented a great many points of extreme interest. The patient was a lady residing in Wisconsin, thirty-five years of age. She had been married fifteen years, and for fifteen years had had perfect health. In September, 1883, she missed a menstrual period for the first time, and one month later she suffered from very violent pains. Not long afterward she had two or three attacks of paroxysmal pain, radiating from the right side, and on one of these occasions, (October 27), it was of extreme severity and lasted for two hours.

The last attack was on November 7, and she then began to improve in health. She passed two menstrual periods, and presented all the signs of pregnancy. Until the following July she did not have a single bad symptom. On June 17, however, the fœtal movements, which had previously been of the most marked character, were felt for the last time. About the middle of July she supposed herself to be in labor, and sent for her physician, Dr. Meade, who, on making an examination, found the uterus quite high up. The cervix was somewhat softened, but the pains were false; and he therefore left her until the following morning. He then ascertained that the uterus was empty, and that there was a tumor outside of it. The possibility of extra-uterine pregnancy occurred to him, and, under the circumstances, he called in Dr. Marks, of Milwaukee; but a positive diagnosis was not arrived at.

In September, 1884, she went to Chicago and consulted an eminent gynæcologist, who strongly insisted that there was no extra-uterine pregnancy, and made the diagnosis of cysto-fibroma of the uterus. In February, 1885, she came on to New York and placed herself under the care of Dr. Fordyce Barker, who at once recognized the case as one of abdominal pregnancy, and invited Drs. Thomas and Lusk to examine the patient. They concurred in the opinion of Dr. Barker, and she was advised to return to New York in the following June or September for the purpose of having an operation performed.

After her return home she suffered from what was called remittent fever, but which, in view of the condition of affairs found at the autopsy, indicating prolonged septicæmia, Dr. Lusk could not doubt was in reality the effects of putrid absorption. In the following autumn her health appreciably failed. The pulse became very rapid, and she had a good deal of diarrhœa, as well as nervous disturbance. In December she was persuaded to go to Chicago and consult the same gynæcologist again. He now modified his diagnosis, agreeing with that of the New York physicians; but urged the patient under no considerations to submit to an operation. He informed her that in four cases in which he had himself operated the result had proved fatal, and expressed the opinion that she would not survive an operation. He also encouraged her to believe that she was in no danger, and advised her to go South and live out of doors as much as possible. Accordingly, she went to Atlanta, but during the three months that she was there she was unable to go out of her room. She gradually grew worse, but succeeded in arriving alive in New York in the early Spring. The change of air seemed to have a beneficial effect, and she so far improved that for a short time she was able to go down to one meal a day.

It was three or four days after her arrival that she first sent for Dr. Lusk, and when he saw her he was at once struck with the marked change which had taken place in her condition. She had a pinched appearance, and was extremely anæmic. The pulse was quick, and there was a rise of temperature every evening. There was also constant diarrhœa, or else diarrhœa alternating with constipation. Very shortly a menstrual period came on, and this was attended with the most marked constitutional disturbance. The temperature ranged from 103° to 104°, the pulse was extremely feeble, and there was enormous distension of the abdomen. The tumor also increased very greatly in size. The husband, however, assured Dr. Lusk that there was no occasion to be alarmed, as the same disturbances had been noticed at previous menstrual periods, and had been successfully rallied from.

It was agreed, therefore, that she should be removed to St. Elizabeth's Hospital, and that one week before the expected time of the next menstrual period an operation should be performed; this time being set in order to allow her to recuperate as far as possible from the exhaustion incident to the serious febrile condition mentioned. Unfortunately, however, the husband's predictions were not verified, and from this time she declined steadily in health and strength. Drs. Thomas and Barker were called in consultation, and agreed with Dr. Lusk that, on account of the exhausted state of the patient, an operation offered no hope of recovery, the chances in its favor being almost one in a thousand. The idea of operating was, therefore, abandoned.

Later the husband asked Dr. Lusk how long he thought his wife could live, and when the latter informed him that it would be impossible for her, in her present condition, to survive another menstrual period, he insisted that an operation should be performed, as offering the only possible chance (however remote) of recovery. Accordingly, on the 19th of March, much against his will, Dr. Lusk operated.

The tumor at this time occupied pretty much the entire abdomen, and seemed to be equally extensive on both sides. The incision was made in the median line, below the umbilicus; and it was noticed the fluid from the vessels of the tissues severed, was almost colorless, like serum. The abdominal walls having been cut through, the tumor was observed, with portions of the fœtus shining through. It was found to be entirely free from adhesions to the abdominal walls, and on this account the question arose whether it would not be advisable to remove the tumor entire. Fortunately, as the sequel proved, this course was not adopted, and when an incision was made into the sac, a volume of horribly fetid gas escaped. There was no fluid, except about a tablespoonful of pus. The tumor was stitched to the abdominal walls, and the greatest possible care taken to prevent the escape of any portion of the contents of the sac into the cavity of the abdomen. The back of the fœtus was turned uppermost, and in the process of extraction both the parietal bones dropped off. The cutaneous surface was almost entirely destroyed, and all the internal organs were found to be shrivelled up.

Hypodermic injections of whiskey were constantly kept up and the patient was alive at the conclusion of the operation, which lasted about half an hour, as it was performed with the most careful attention to every detail that would tend to bring about a successful result. The patient was placed in bed, and rallied fairly well, the sac was kept perfectly clean, and the temperature was normal now for the first time. For the first twenty-four hours there really seemed to be a little hope that the case would result favorably; but at the end of that time the patient began to grow rapidly worse. The pulse became very feeble, and the stomach refused to retain any food whatever. On account of the diarrhœa present it was impossible to employ rectal alimentation, and she died of starvation thirty-six hours after the operation.

The autopsy was performed by Dr. H. M. Biggs, who found the uterus in the rear of the tumor, and about the size of an ordinary virgin uterus. The Fallopian tube of the left side extended over to the sac, and its fibres were lost in the walls of the latter. This condition Dr. Lusk considered of great interest in connection with the history. The case was, no doubt, orginally one of tubal pregnancy. Later the tube burst, giving rise to the attacks of paroxysmal pain noticed; and the fœtus then developed in the abdominal cavity. He thought at first that the walls of the sac were composed of tissue identical with that of the uterus; but Dr. Biggs found, on examination, that this tissue was entirely fibrous. There was not the slightest sign of peritonitis, but the sac was so strongly adherent to the intestines that it required about half an hour to separate the adhesions at the autopsy. It was therefore evident that it would have been practically impossible to remove the tumor entire from the abdominal cavity.

This case, Dr. Lusk said, was chiefly interesting from the fact that the patient fell a victim to what he believed to be wholly erroneous teaching. All the authorities say that these tumors should not be removed until the health begins to decline. The danger was, that if the evidences of septicæmia were not distinctly recognized, operative interference was apt to be delayed until it was too late. One, at all events, of the four patients operated on by the Chicago gynæcologist referred to, as shown by the recorded history of the case, was in a dying condition at the time; and Dr. Lusk thought that if the other three were in the same exhausted state, there was no reason whatever to hope for any different results than those noted. The reason often given for delaying operative interference was, that in the course of time the fœtus would be very likely to be converted into a lithopædion; but statistics showed that the number of cases in which this occurs is relatively very small.

The presence of the fœtal tumor in the abdomen was always a source of constant pain and distress. As a matter of humanity, therefore, the child ought to be removed very soon after it has ceased to live; instead of being allowed to remain until the appearance of symptoms, which indicate that the constitution of the mother is already undermined. The cases which Dr. Lusk had investigated showed that nearly all the patients recover when the operation is undertaken at an early period. In itself it was not really a dangerous procedure, and the bad results which had been noted in so many instances were due simply to the fact that operative measures were adopted only as a last resort.

The development of the symptoms denoting putrid absorption was almost always insidious, and there were very few cases in which marked symptoms were presented until quite late in their history. The effect of the vicious process going on in the system was primarily in the blood, and afterwards resulted in the degeneration of all the parenchymatous organs. In the case detailed by Dr. Lusk the heart was especially affected.

Dr. Lewis Hall Sayre read a paper entitled:

A CONTRIBUTION TO THE ETIOLOGY OF POTT'S DISEASE.

The symptoms accompanying spondylitis in its earliest stages, he said, were vague, and not of a character to call attention directly to the spine. He was among those who look upon traumatism as the exciting and necessary cause, which in a constitution already vitiated need be much less severe to produce spinal or other lesions than in a person of vigorous health.

Later on in the paper he spoke particularly of the class of cases in which the disease commences on the sides of the bodies of the vertebræ, at the point of their articulation with the ribs, and not in the anterior part of the bodies, as is commonly the case. They were usually caused by some violence applied to the rib, which originated an inflammation at its articulating facet on the spinal column. These cases were more than ordinarily obscure in the commencement, and were difficult of diagnosis, as pressure on the head seldom caused pain, and the child could run, and sometimes jump without pain, and could often bend the body without inconvenience.

In order to detect this condition it was necessary to place the child across the lap, making strong pressure upon each rib, so as to bring it into firm contact with its articulating vertebræ; and when the rib was reached which articulated with the inflamed or diseased vertebræ, either pain would be produced or a muscular spasm, very similar to that caused by "point pressure" on a "contractured" tissue. Manifestations of trouble might also be produced by pressure made on either side of the spine over these articulations. In conclusion, he related a case illustrating this form of spondylitis.

Dr. Lewis A. Sayre remarked that the case described by his son was one of the most interesting that he had ever seen. It had been pronounced by a well-known neurologist to be one of organic disease of the cord, and there was absolutely no deformity that could be detected by the most careful examination. He himself thought there was no spondylitis until he made a lateral examination and found that pressure over the vertebral articulation with the eleventh rib caused acute pain. When this point of tenderness was discovered it became evident that there was disease at the side of the vertebra, and a plaster-of-Paris jacket was accordingly applied. Owing to the fact that the patient indulged in violent exercise before the latter was perfectly "set," it soon broke down and was removed at the end of two weeks, when a distinct knuckle was found. This proved that the diagnosis was correct; but if the first jacket had been perfect, it was doubtful whether any deformity whatever would have occurred, and the diagnosis of Pott's disease would have been open to question. The deformity, however, was now so slight that it would be likely to

entirely escape observation under ordinary circumstances.

After the narration, by the President, DR. C. A. LEALE, of a case of spondylitis occurring in a physician, Dr. J. W. S. GOULEY exhibited a peach-pit which he said was of interest as contributing a

CONTRIBUTION TO THE SUBJECT OF FOREIGN BODIES IN THE ALIMENTARY CANAL.

A gentleman seventy-one years of age had removed it from his rectum three months after it had been swallowed. It was an inch and a quarter in length, seven-eighths of an inch in breadth, and eleven-sixteenths of an inch in thickness. When it was extracted from the rectum the patient remembered that he had eaten some pickled peaches three months before, since which time he had not tasted any peaches. The case was interesting from the fact that the peach-pit caused no pain or distress whatever in passing through the intestinal canal. Dr. Gouley then related a case occurring in his service at Bellevue Hospital. In a patient suffering from delirium tremens, who died shortly after admission, there were certain heart symptoms which could not be satisfactorily explained, though there were some signs of pericarditis. At the autopsy the pericardium was found filled with flakey lymph, and when the heart was lifted up a metallic substance was felt. On opening the œsophagus this proved to be a plate with two teeth attached.

DR. GOULEY also mentioned a number of instances mostly taken from "Eve's Surgical Cases," in which enormous objects, such as forks, spoons, and egg-cups, were swallowed, and in some instances successfully passed through the body.

DR. LOUIS A. SAYRE referred to some interesting cases occurring in his own practice, and Dr. P. Brynberg Porter related a case recently reported by Dr. C. B. Hutchings, of California, in which an open penknife passed successfully through the alimentary canal, the patient, a young man of twenty, being advised to eat principally of such food as mush and buckwheat cakes, which would distend the bowels and prevent injury to them in the passage of the knife through the intestinal tract. Dr. Porter also spoke of a case recently reported to the New York Surgical Society by Dr. A. G. Gerster, in which a metallic button, three-quarters of an inch in diameter, was swallowed by an infant six months of age, without the mother's knowledge. On account of increasing dyspnœa and failing health, tracheotomy was performed six months later, under the supposition that the trouble was due to a laryngeal tumor; as at this time the button was firmly imbedded in the tissues between the œsophagus and the trachea, it was not discovered at the examination made immediately after the throat was opened, and three days afterward the infant died of pneumonia.

The President and Dr. E. S. F. Arnold also related interesting cases.

— At the approaching meeting of the British Association for the advancement of science, at Birmingham, commencing on September 1st, the organizing committee of Section A has arranged that a special discussion shall be held, jointly with Section D, on the physical and physiological theories of color-vision. The discussion will be opened by Lord Rayleigh, and Dr. Michael Foster will also take part in it.

SOCIETY OF MEDICAL JURISPRUDENCE AND STATE MEDICINE, NEW YORK.

STATED meeting June 10, 1886.

DR. E. C. SPITZKA read a paper on,

THE ATTITUDE OF LEGAL MEDICINE *versus* HYDROPHOBIA.

He did not believe, he said, that there was another branch of inquiry in which time-honored tradition, erroneous observation, ill-balanced reasoning, and immature theory played so large a part as in that relating to the transmission of rabies from animals to man. While his experience with spurious hydrophobia had been considerable, with the real disease it was infinitely small. Indeed, he would say *nil*, but that he wished to avoid discussing a question, both sides of which were represented by able thinkers and observers, namely: whether there is such a thing as genuine hydrophobia in man, due to transmission from lower animals, and to nothing else?

He then announced the following propositions as embracing the points maintained in the preliminary part of his paper:

(1) There is at present no epidemic of hydrophobia in New York city or its vicinity.

(2) A number of deaths have occurred from spurious hydrophobia (lyssophobia) in New York and its vicinity during the past nine months.

(3) The agitation of the subject of Pasteur's method of preventive inoculation for hydrophobia, and the accompanying strained accounts of suffering and death from that disease, are responsible for these deaths.

(4) To prevent the serious and oft-times fatal imaginary disease, it is necessary to inculcate a healthy public sentiment, which shall frown down the agitations of questions which are of a strictly scientific character by persons who are neither biologists or physicians, and who have no other motive than the creation of a sensation, regardless of consequences.

(5) It should be strictly inculcated on all officers intrusted with the preservation of the public peace and public health that the only way to determine whether a dog is suffering from rabies or no, is to submit him to the inspection by competent veterinarians in a living condition. The desirability of some such ordinance is attested by the fact that persons on the road to death by hydrophobia have recovered on learning that the dog which bit them remained alive and well.

(6) The results of researches on hydrophobia should, for the present, remain within the domains of technical literature. There are so many problems connected with the question of rabies which are as yet unsettled, and promise to remain so for some time to come, that it would be tantamount to criminal recklessness to publish prematurely alarming discoveries in the lay press.

(7) The method of demonstrating rabies by direct inoculation of the brain is fallacious. The conclusion drawn by Liantard, from an experiment thus performed, that the Riverdale dog was mad, was obtained by misleading methods.

(8) The means to be adopted to prevent future outbreak of spurious hydrophobia is to muzzle the dogs, to dam up within appropriate receptacles, the torrents of ink flowing from the pens of hasty investigators and to exclude sensational publications from the household.

Canine pathology would hereafter prove an easy science to master, since it would consist of but one

simple syllogism, namely: all symptoms of canine disease are symptoms of hydrophobia; all dogs presenting such symptoms should be destroyed; hence, for all such dogs there is but the remedy of the bullet or the policeman's club. Dr. Spitzka referred to the history of the so-called epidemic that prevailed since the "needless, wanton and wicked agitation of the matter which was begun a few months ago." For a week after the announcement was made relative to the Newark epidemic, several scores of cases of hydrophobia were reported from every part of the country; and he asked if a single case of the kind could be remembered in which any attempt meriting the adjective scientific — indeed, any attempt whatever, was made to verify the existence of the disease, and when it really was verified.

He then took up a number of the cases which he said had been published far and wide, with the deliberate and malicious purpose of causing a sensation; and stated that he would show that the result was the production of imaginary disease, real alarm, real suffering, and something else which was sufficiently real, namely death. In regard to the Newark cases he said: A dog had bitten a number of other dogs, as well as six children. The transgressor was killed, in accordance with the time-honored custom of hanging such criminals first, and then trying them afterwards. Four of the children were sent to Pasteur, and two remained in Newark, while the bitten dogs were very sensibly locked up where they could do no harm, but on the other hand, where it could be determined whether they had really been inoculated with hydrophobia or not. The result proved that they had not, and the two children who did not go to Paris remained as well as the others, showing that in this case, at least, the alarm had been a false one. In speaking of the case of George Neall, the Newark pound-keeper, he said that it seemed that for several days, that is, during the entire time of his illness, he obtained no drink, and ate nothing except an apple. Dr. Spitzka stated that it was evident that the man was under the dominion of a terrible fear from the fact that he got up shortly before his death, walked into the kitchen, placed his hand in a pail of water, and had a spasm in consequence, which lasted half an hour; and he then asked whether starvation, depressing neurotic remedies and terror were without an effect on this patient's vitality.

Animals, he said, were liable to become insane, as man did, from various causes and in various ways; and he had hoped to exhibit to-night an insane cat, the pet of a friend, which had been shot in the head. In Japan, as Professor Law informed us, the boys produced what was supposed to be rabies by administering a certain fungus to dogs. He believed the number of persons reported as dying of hydrophobia almost simultaneously with the agitation of the subject of Pasteur's methods, but who had been bitten between nine months and nine years before, would be found to amount to a hundred or more.

The ablest review which had yet been made of the subject of spurious hydrophobia, was by Dr. Dulles, of Philadelphia. He showed that this condition might result from (1) disorders of the stomach, especially in very young children, as well as from inflammation of the œsophagus and stomach in adults; (2) disorders of the respiratory apparatus; (3) disorders of the circulatory apparatus; (4) systemic conditions, such as rheumatic fever, uræmia, intermittent fever, mercurialization and pregnancy; (5) disorders of the nervous system: meningitis, pachy-meningitis, tumors and parasites of the brain, simple neuritis, acute mania, delirium, alcoholism, tetanus, hysteria, and neurotic poisoning. He then related three cases which he said he was able to add to the instances collected by Dr. Dulles, where symptoms commonly or erroneously regarded as hydrophobia were present. The first was one of epileptic delirium which he saw in consultation in Williamsburgh, and the report of which he had published in the *New York Medical Record*. The second was one of typhus fever which was sent to the Presbyterian Hospital, New York, and which on account of the character of the delirium present, was supposed to be one of hydrophobia. The third case, one of disseminated sclerosis, described by Pollak, he quoted from the *Archiv. für Psychiatrie*. Dr. Spitzka considered the resemblance between spurious hydrophobia and the so-called real affection so great that he could not criticize any one for believing, with Dulles, that the existence of a genuine hydrophobia in man was not proven; and by way of corroboration subjoined some extracts from an article in "Pepper's System of Medicine," the author of which was a believer in the reality of hydrophobia.

Later he referred to the fact that a "Pasteur Institute" had been organized in New York, and said that he believed he was doing that institution no injustice when he said that the more hydrophobia scare could be created in the community, the better it would flourish. It rested for the present on two foundations: First, on a rabbit brought over from Paris, which had been inoculated by Pasteur, and second, on the allegation that hydrophobia now existed in New York city. Inasmuch as one of the incorporators of the institute (Dr. Liantard) had contributed to the public alarm on this question, by the published autopsy on one dog, and an experiment on another, he proposed to present for consideration certain facts which he thought would not be gainsaid by any of his medical friends, and to bring before the Society some animals to which these observations related. The brains of one or two of these could be removed, and those present could examine both the living and the dead subjects; so that they could themselves test the correctness of his conclusions.

Dr. Spitzka then proceeded to quote from the report of the Morosini case prepared by Dr. Liantard for the *American Veterinarian Review*, as published in the *New York Herald*. Miss Morosini was bitten on April 14th. The dog was killed almost at once, and on the same day was sent to the Veterinary College. Dr. Bulkley (the attending physician in the case), requested that a post-mortem should be made as early as convenient, as it was a matter of the greatest importance. The post-mortem was begun without delay, and there were revealed important lesions; congestion of the fauces, empty condition of the intestinal tract, which was slightly congested, stomach containing one large bird feather, the kidneys somewhat congested, and the bladder empty and retracted, and somewhat congested. These symptoms were considered sufficient evidence, with the history of the case, to justify a diagnosis of rabies. A report to that effect was made to Dr. Bulkley, and it was urgently advised by Dr. Liantard that the injured young lady should go to Paris as early as possible, and place herself under M. Pasteur for treatment. Then it was

decided at once to try cerebral inoculation, as carried out by M. Pasteur, to confirm the diagnosis.

The brain and medulla of the dog having been carefully kept, another large dog was secured for inoculation on the following morning. After placing the dog under complete anæsthesia, the cranium was trephined a little on one side of the median line. The dura mater was then carefully divided, and a little of the medulla of the first dog placed over the cerebrum of the second. The edges were brought together by sutures protected by wadding and collodion, and the animal was placed in a secure kennel for observation. He recovered from the anæsthetic, ate well, and the wound healed slowly; presenting apparently nothing abnormal. On April 30th, however, the dog appeared to be more affectionate to those who were caring for him, and also to the house-surgeon who watched him. On May 1st, the sixteenth day after the inoculation, he showed the first symptom of dumb rabies, paralysis of the lower jaw. The mouth was slightly open, the jaw hung down, and abundant saliva flowed from the mouth. The next day the lower jaw became more paralyzed, and the animal was weak and tottered in his gait, while paraplegia now showed itself. The dog died on the 2d, and at the autopsy the following lesions were found: Pharynx highly congested and containing considerable foreign matter, such as hay and straw; the stomach also highly congested. In it were found the same foreign substances seen in the pharynx; the intestines were empty and the bladder empty and retracted.

So far as Dr. Liantard's diagnosis of rabies in the dog that bit Miss Morosini was concerned, Dr. Spitzka said that he had to state that as assistant to Prof. Henry Draper at the University of New York, he had had the opportunity of examining scores of dogs brought into the laboratory, and not one of them even showed any signs of rabies. On the contrary, they exhibited that docility and affection which, under the circumstances, was the most touching characteristic of the animal. There was scarcely one, and certainly not one young dog, in whose stomach he did not find more or less foreign material. This became a subject of comment in the laboratory, and it was supposed to be a satisfactory solution of the problem that intestinal worms were found in large numbers in those dogs which had the largest assortment of foreign bodies in their stomachs. The speaker referred to a cat which contained three tapeworms. The feather in the stomach of the dog which bit Miss Morosini, therefore, went for nothing. As to the congested kidneys, congested fauces and empty bladder, he would simply ask how the fauces, kidneys and bladder would appear of a man who had been hunted for several hours by a large crowd armed with shot-guns and pitch-forks.

With regard to the "dumb rabies" which Liantard thought he had produced in the second dog, every one familiar with the researches of Schiff, Flourens, Hitzig, Fritsch and Goltz, would recognize in it the ordinary results of experimental and inflammatory disturbance of the brain function in the dog. According as the irritating injection affected one cortical field, or another, the paralysis would vary; but paraplegia was quite characteristic of meningitis and encephalitis in the dog. In order to show that the symptoms of hydrophobia, as Dr. Liantard considered them, could be produced in healthy dogs by introducing non-rabic foreign substances into their skull cavities, he had performed experiments on six dogs, the details of which he now proceeded to present. In the first, the cranium was trephined May 29, and, after incision of the dura mater, six cubic millimetres of the spinal cord of a healthy calf, slaughtered about twenty-eight hours before, introduced into the brain substance. On June 2d, there was manifest paralysis of the hind legs, with considerable fever. The eyes were dull, and there was ptosis. The disposition of the animal was exceedingly friendly. The wound was granulating and discharging healthy pus. In the second dog, a mongrel spitz, on May 29, a button of bone was removed in the right temporal region, and some of the same material used in the last experiment was introduced in a comminuted form. On June 2d, it was noticed that there was some paralysis and ataxia of the hind legs. It showed a marked tendency to fawn, in the place of its naturally aggressive disposition.

The third dog, a large mongrel black-and-tan, was trephined June 2d, about an inch from the median line, and through the opening, twenty drops of an emulsion of a calf's cud was slowly injected by a hypodermic syringe into the brain. This was followed on June 5th by paralytic and ataxic symptoms, which were marked on the left side more than on the right. On June 2d, a fourth dog, a mongrel collie of vicious disposition, was operated on in the same way as the last, except that the material injected was an emulsion prepared from the pons and cerebellum of a patient who died of hydrophobia on May 14, whose brain he obtained through the courtesy of Dr. P. H. Kietschnar of Brooklyn. This was injected into the parietal region, and, by calculation, into the thalamo-aural region.

On June 6th, there was some doubt as to whether there was any weakness of the hind-quarters or not. At that date it was the liveliest of the four dogs, and fed best.

In the fifth dog a slit was made in the dura mater, after trephining, and a piece of common yellow soap of the size of fifteen cubic millimetres introduced between the dura and pia. In the sixth, ten drops of horse's stale urine were injected into the brain substance of the posterior region. This animal had a glandular and suppurating swelling in the inferior nuchal region.

Dr. Spitzka then put the following questions:

(1) Is there any symptom of hydrophobia related of Dr. Liantard's animal, which is not present in these dogs inoculated with the spinal cord of a calf, with soap and with decayed fluids?

(2) Are the mental disturbances resembling those of dumb rabies, so-called, not even much greater in the dogs exhibited to-night than appears in the account of Dr. Liantard's dog?

(3) Would it not have been well to have performed such experiments as those whose result is shown to-night at the same time, or before attempting to make of the inoculation of the brain a test of hydrophobia, and alarming the public?

(4) Was it wise, in view of the bad effect which the knowledge that the dog which bit a person was mad, has on that person's mind, to make this announcement in such a shape that it must reach him or her?

(5) What reason had Dr. Liantard or his house-surgeon for omitting an examination of the brain in the case cited, or, if they made it, for failing to publish its morbid appearances?

Dr. Spitzka said he had been thus lengthy in detailing the faulty nature of the evidence on which an epidemic of hydrophobia might be announced, and in demonstrating that mere terror and expectant attention were the chief factors in the spread of the disease, because the practical problem with which legal medicine had to deal, was not so much the prevention of a genuine, as of a more or less artificial disorder. Inasmuch as the same measures which would check the spread of the real disease, if it existed, would also, and as effectually, check the ravages of that terror-psychosis known as hydrophobia, we might deal with both together. The bite of any animal, or even of men, suffering from febrile disorders, excitement, tetanus, or blood-poisoning, was more or less dangerous; and undoubtedly many of the sequelæ of such bites had been summed up under the general caption of hydrophobia. Whatever theory we adopted, it was the duty of the community to protect its members not only against the more or less venomous bites of such animals, but against intrinsically harmless bites. Historically speaking, the system of muzzling dogs had been found so efficacious, that it was strange that it had not been universally adopted.

Having given some statistics on this subject, and stated that the plan of muzzling had been adopted in England, he remarked that everything, of course, depended on the manner in which the law was enforced. If, as was only too likely in our community, the persons entrusted with its execution were selected from the worst class of ruffians, and their pay were made dependent on the number of dogs they could steal from their owners, and the amount of blackmail they could buy through such acts, the public would become disgusted with the law, and those evading it would be supported, instead of condemned by public opinion. Another precaution which had been almost uniformly neglected on this side the Atlantic, was the proper observation of suspicious dogs. There was no evidence so good as that obtained from the living subject of rabies. In addition, much suffering and indeed, many deaths, might be prevented by the discovery that a dog which had bitten was not mad; and that could be determined with certainty only by keeping the animal alive.

With regard to the recognition of a Pasteur institute as a factor in the legal enactment of measures to prevent hydrophobia, he quoted the following passage from the *Deutsche Medizinische Wochenschrift* of April 29, 1886, which coincided entirely with his own opinion. "Attention has been repeatedly directed in this Journal to the fact that the method of Pasteur cannot be unreservedly accepted as an established one, and that the formation of Pasteur institutes is premature until the method of preventive inoculation be placed on an absolutely fixed basis, which, in view of the large number of experiments on animals and inoculations made daily in Pasteur's laboratory, will presumably be affected in a not unduly remote period. It were high time, indeed, that we left behind us the stage of newspaper reports, which for some months have furnished nothing new beyond the daily increasing number of those inoculated, and the deaths, and replaced the present monopolization of the matter by the coöperation and critical proof-tests of competent observers."

One of the dogs inoculated by Dr. Spitzka died the day before the meeting, and the autopsy revealed the presence of well-marked meningitis, while another, the bull-dog inoculated with a portion of the spinal cord of a calf, was despatched in the presence of the audience. The autopsy in this instance, which was made immediately after death by Dr. N. E. Brill, showed the animal to have been suffering from hæmorrhagic encephalitis.

DR. DULLES, of Philadelphia, expressed himself as extremely skeptical in regard to the existence of such a disease as true hydrophobia. If there were such an affection he thought that Dr. Spitzka had produced it with simple inoculations of matter not derived from rabid subjects. He believed that fifty years from now the specific theory of hydrophobia would have as few adherents as the doctrine of witchcraft had at the present day. Patients suffering from so-called hydrophobia might be divided into three classes:

(1) Those affected with a variety of diseases giving rise to symptoms of a similar character to those described as belonging to rabies, such as tetanus, for instance; (2) Those having certain affections of the mind, such as mania, and other forms of insanity; And, (3) those suffering simply from fright.

DR. BRILL read a short paper, the object of which was to throw discredit and ridicule upon Pasteur's work.

DR. KRETSCHNAR said, that however skeptical any one might previously have been, he thought that if he were called upon to treat a *bona fide* case of the disease, as he himself had recently been, he would be convinced that it had a very positive existence. In this instance he did not know that the patient had been bitten at all until within a few hours of his death, and supposed that the man was suffering from spasm of the glottis; while the patient himself was not at all the victim of fright, and at one time in the course of the attack, when he had been rendered comparatively comfortable by morphia, felt confident that he would recover.

DR. H. M. BIGGS, of the Carnegie Laboratory, said that while Pasteur had not, in his opinion, as yet positively demonstrated the correctness of his views, he thought that he had done enough to show that there was a strong probability of their being substantially true. Excluding the Russian patients, who had been bitten by wolves, there were but two cases out of over nine hundred, in which hydrophobia had occurred in those who had been inoculated after being bitten by animals supposed to be rabid; and there were certain circumstances connected with both of these which rendered them of such a character as not to invalidate the protective power of the inoculations under suitable conditions. Pasteur had devoted six years of arduous study to this subject, and if it were not hydrophobia that he was dealing with, it must be some new disease, the existence of which had been hitherto unknown, since there was no form of septicæmia which had an invariable period of incubation, this period being of definite duration in both dogs and rabbits, and being entirely different in the two kinds of animals.

As to the Newark children, while it had not been positively demonstrated that the dog which bit the children had true rabies, it seemed to him highly probable that it had, since it acted precisely in the manner described in the books as characteristic of rabid dogs. Thus, it ran for a distance of about three miles, snapping and biting at everything that came in its way.

He had learned on the highest authority that it was not known certainly whether the dogs which were kept under observation afterwards had really been bitten or not. At the end of two or three months, no symptoms of rabies having developed in any of them, they were all killed with the exception of one, which was returned to its owner; and it was a significant fact that ten days after it was released from confinement, it was seized with the characteristic symptoms of rabies, and died. While it was true that the two children which had remained at home were as well to-day as the four who were inoculated by Pasteur, he had positively ascertained that in the case of one of them there was only a very slight abrasion produced by the dog, and that in the other there was not even as much as this. The skin was entirely unbroken, as the boy was protected by a heavy overcoat, in addition to other winter clothing.

We had been called in consultation to see Neall, the keeper of the Newark dog-pound, who died a short time ago, of supposed rabies, and agreed with those in attendance that the case was probably a genuine one of the disease. The inoculations which he had made with specimens of the brain and spinal cord of this patient, had, however, proved entirely negative in their results; and therefore he was forced to the conclusion that a mistake in diagnosis had been made in this instance. As to the inoculations of dogs made by Dr. Spitzka, and described in his paper, the results obtained were of no value whatever, and he felt called upon to express his emphatic protest against the whole tone and drift of the proceedings this evening. In other fields Pasteur had done such admirable scientific work, and accomplished such splendid results, that he thought his present researches should not be condemned until they had received a more thorough investigation than it had as yet been possible to make in regard to them.

Recent Literature.

Transactions of the American Gynæcological Society. Volume X. for the year 1885. New York: D. Appleton & Co. 1886.

These volumes of transactions are always welcome, embodying as they do in so attractive a form so much that is of interest and value. The President, Dr. W. T. Howard's address presents "Two Rare Cases in Abdominal Surgery." The differential diagnosis in these cases is very thoroughly and instructively worked out, and the first one, a case of encysted tubercular peritonitis, as proved by the autopsy, is especially interesting because of its rarity.

Dr. Busey's paper on "The Natural Hygiene of Child-Bearing Life," contains a number of important truths, but they are unfortunately so obscurely stated that the reader loses much of their force. Fewer words, less involved sentences, and a simpler style would add to the value of the paper.

Dr. H. G. Garrigues contributes a paper on "Puerperal Diphtheria," whose special value lies in the fact that it very clearly points out that so-called puerperal fever really includes several different processes, and shows how the recognition of the real nature of any one form is quickly followed by appropriate treatment, and lowered mortality. Recognizing the diphtheritic character of the grayish patches which occur in a certain number of cases, it was a natural sequence to apply such a combination of general and local remedies, as to lower the mortality. Dr. Garrigues refers in this connection to the very elaborate antiseptic precautions which he observes in all cases of labor, and makes the gratifying statement that in two years from the introduction of such treatment, the mortality fell from 7.69 per cent. to less than three-quarters of one per cent.

Dr. J. T. Johnson's paper entitled: "Four Cases of Oöphorectomy with Remarks," adds but little to our knowledge of the subject. The discussion was almost exclusively on the question when the operation is justifiable. The general tone of the remarks was conservative, Dr. Emmet going so far as to say that he thought more harm than good had been done by the operation. He found no one to agree with him in such an extreme view, however.

Dr. Thad. A. Reamy gives a new method of supporting the perineum during labor, which will hardly, we think, prove of more value, than other well-known methods. Dr. E. W. Jenks reports an interesting case of Cæsarean section. Dr. Elwood Wilson in his "Remarks on the Use of Tarnier's Forceps," withdraws the protest he made in 1881 against their use, and gives the notes of nine cases in which they have proved of great service.

The value of Dr. Sutton's paper on "Emmet's Cervix Operation modified in Certain Cases," lies in the discussion. The paper starts the question, what should be done when there is so much hypertrophy of one or both lips, that even after denudation, the lips cannot be properly approximated. The author advocated a partial amputation, or carrying the denudation completely across the hypertrophied lip. Various other methods were proposed, the best in our judgment being that advocated by Drs. Skene and Baker of leaving the undenuded strip for the cervical canal, and cutting out a V-shaped piece on one or both sides, as may be needed.

"Inflammation of the Parotid Glands following Operations on the Female Genital Organs," is the title of a short paper by Dr. Goodell. His cases and numerous others cited in the discussion seem to prove that the parotitis is not a mere coincidence, but that some sympathetic relation exists between the sexual apparatus, and the parotid glands.

An ingenious paper follows, by Dr. Chadwick, on "Peristalsis of the Genital Tract, and a New Theory to Explain Relaxation of the Vaginal Outlet during Labor." The theory seems to us tenable and to explain in a very rational way phenomena which every physician must have observed. A paper on "Facial Paralysis of the New-born," by Dr. Theophilus Parvin, contains nothing new.

The longest article in the Transactions is that by Dr. H. F. Campbell, on "The Genu-pectoral Posture: its Value in Impeded Uterine Reduction, and in the Prolonged Nausea and Vomiting of Pregnancy," which is really a continuation and completion of his paper read before the same Society in 1876. When the fact is considered that there is practical unanimity in the profession as regards the great value of this posture in effecting uterine replacements, it may be questioned whether so prolonged a discussion is not unnecessary, and perhaps unprofitable. We are of the opinion that the simple entrance of air into the

vagina even in the perfect genu-pectoral position will often fail to reduce the uterus. Some pressure on the fundus through the posterior cul-de-sac, or some traction on the cervix will usually be necessary.

The position is a valuable aid undoubtedly, and even Simpson and Hart in their brochure allow that. We think the criticism which Dr. Campbell makes that their conclusions drawn from a cadaver placed in this position and frozen, are faulty, is perfectly just. The conditions are too different to be of value for purposes of comparison. This paper is of special importance from its emphasizing the rôle which uterine displacements undoubtedly play in causing nausea and vomiting of pregnancy, and the great help the genu-pectoral position is in their reduction.

Three interesting papers by candidates close the volume which on the whole can hardly be said to equal some of the others in the importance and originality of its contents.

On Asthma: Its Nature and Treatment. Containing an entirely new and comprehensive working hypothesis, suggestive of new remedies, and of the more efficient applications of old ones. Illustrated. By Horace Dobell, M.D., etc. London: Smith, Elder & Co. 1886. 4to. pp. 32.

Dr. Dobell tells us that for some years the subject of asthma has been much in his thoughts, and that in 1878 he began to query whether asthma is due to some interference with the ease with which the hæmoglobin combines with and also delivers up oxygen. Reflection and study led him to think that this query "may be made the basis of a more comprehensive working hypothesis than any other with which I am acquainted." We have at the present day a large number of theories as to the pathology of asthma, each of which may be more or less applicable to some cases, but no one of which can explain all that come under our observation. Dr. Dobell thinks that his hypothesis, starting from the hæmatin and hæmoglobin in the tissues and blood, and their relations to respiration and histogenesis, brings "those other hypotheses which have a rational *locus standi*, but which have hitherto been considered antagonistic, into possible or probable harmonious correlation."

It is impossible here to set forth the line of argument by which this hypothesis is supported, and it must be stated that the reasoning is not so clear as it might be. Even with the aid of the ingenious diagram at the end of the book, it is not always easy to follow the author. The book is suggestive of thought rather than replete with fact. One useful purpose, at least, which it will serve is in enforcing attention to the fact that an asthmatic paroxysm is but a symptom, a fact which writers sometimes seem to lose sight of. There must be some underlying cause for the occurrence of so marked and peculiar phenomena in such varied conditions as, among others, hypertropy and polypus of the nasal mucous membrane, emphysema, and chronic bronchitis, foci of disease in the lungs, heart or kidney disease, dyspepsia, certain diseases of the central nervous system — to say nothing of the purely nervous asthma, with no appreciable anatomical changes in any part of the body. It must be clearly understood that Dr. Dobell does not mean to assert that the constant factor is failure of the hæmoglobin to absorb or give up oxygen, but only suggests an hypothesis which he thinks may help explain all the facts.

One practical point deserves notice. A distinction must be made between the true paroxysm of asthma and its ghost, or the "phantom paroxysm." During the height of a bad attack, the respiratory centre calls upon the will for aid in respiration to avoid asphyxia, and the latter may continue to act after the period of necessity has passed, not realizing that the lower centres may again be safely trusted with the work. Under these circumstances, antispasmodics and narcotics are no longer useful, but stimulants to increase the heart power and excite the reflex respiratory centres by an increased afflux of fresh blood, are called for. A striking case in point is cited. A complete list of remedies for asthma is given, and it is suggested that the anhydrous oxide of barium is worthy of careful experimental test as a remedy by reason of its analogy to hæmoglobin in its behavior to oxygen. That barium and its soluble salts are poisonous contraindicates their use no more than that of arsenic, for instance. F. C. S.

The Surgical Diseases of Children. By Edmund Owen, M.B., F.R.C.S., Surgeon to the Hospital for Sick Children, etc. Philadelphia: Lea Brothers & Co. 1885. pp. 504.

This volume, which is one of the series of clinical manuals for practitioners and students of medicine, is written in a very attractive, interesting manner. It contains much important and valuable information concerning the affections of children requiring surgical aid, and is also filled with practical suggestions, a knowledge of which is of great service.

Pathology occupies apparently a secondary position in the arrangement of the work. The clinical history of the diseases treated often describes only typical cases.

Occasionally one reads portions of a subject with pleasure and admiration at the concise graphic statements of the author only to ultimately have the interest thus aroused left ungratified, so that one cannot help wishing the entire subject had been treated in the instructive practical way in which it is in part presented to the reader.

Treatment has especially received the author's attention. It contributes much to the value of the work, and is with some exceptions quite satisfactory. For example, the "simple" treatment recommended for genu valgum and "bow-legs" seems quite easy and attractive, but a short experience would probably demonstrate that the method was not as practical as its description would cause one to expect.

It is also disappointing to find the same old familiar cuts of apparatus, which are seen in almost every surgical work, recopied again without any allusion to the improved patterns which experience has developed. Thomas, for instance, has made several valuable changes in his knee-splint since he published in 1876 the figure of the apparatus subsequently so extensively copied.

As a manual to enable one to make a rapid review of a subject it will be a valuable addition to a surgeon's library, but as a "complete monograph" it is in certain respects disappointing.

Any one who has treated spinal caries with plaster-of-Paris cannot but admire the author's skill and manual dexterity which enable him with "the help of an able sister" to apply fifteen jackets in one and one-fourth hours.

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MODERN VIEWS AS TO FUNCTIONS OF THE LIVER.[1]

EXPERIMENTS made by means of the biliary fistula have shown that the biliary acids, though resembling the fatty acids in their chemical composition, are not derived from the fat of the blood, as no more bile is secreted when the animals are fed on fat alone than during entire abstinence from food. On the other hand, Nasse has recently proved, as did the earlier experimenters, that a highly azotized diet occasions a great increase in the flow of bile, and the inference is a legitimate one that as far as the components of the bile are the products of food, it is from the so-called protein compounds that they are chiefly derived. Moreover, as fasting does not altogether arrest this secretion, it may be inferred that bile is also formed from such of the nitrogenized ingredients of the blood as come from tissue disintegretion.[2] The earlier physiologists took advantage of this fact to recommend as a therapeutic measure to "bilious" persons, whether their biliousness was supposed to be due to functional torpor of the liver, or to excessive bile production, — that they should lessen or suspend the ingestion of meat albuminoids.

Another fact learned from the biliary fistula is that the flow of bile is greatly augmented after the ingestion of food, while it is almost *nil* during abstinence.

We have here room for but a brief allusion to Rutherford's important experiments made to ascertain the activity of the biliary secretion after the administration of different medicinal substances. According to these experiments aloes is the best cholagogue, and laptandrin the poorest; calomel had hardly any action, such purgatives as podophyllin, iridin, euonymia, jalap, sulphate of soda and colchicum, proved to be excellent promoters of the biliary flow. It is not known whether these medicines act by stimulating directly the hepatic cells, or the secretory nerves, or both: there is reason to believe that they do not produce their cholagogue effect by causing congestion of the liver.

Important knowledge has been obtained concerning the functions of the liver by comparing the blood which leaves the liver by the hepatic vein with that which enters it by the venæ portæ. Thus Claude Bernard proved that fibrin is destroyed or transformed in the liver, and the analogy of chemical composition renders it extremely probable that effete fibrin is utilized in the liver for the formation of the resinuous acids of the bile. Certain it is that the blood of the hepatic vein contains little or no fibrin, and similar observations with regard to the red blood corpuscles have led Murchison to conclude that the liver "is the grave of the red globules." The similarity of composition of hæmatine and bilirubin has also made it probable that the nitrogenous coloring matters of the bile are the result of this destructive process.

As for urea and uric acid, Cyon has remarked a large increase of these principles in the blood of the hepatic over that of the portal vein. It has, moreover, been proved by Murchison, Charcot, and Brouardel, that all congestive affections of the liver augment the quantity of urea in the urine, while in all destructive diseases of that gland urea-excretion diminishes notably. The conclusion of these physiologists is that urea is formed in the liver, the quantity of its production being dependent on the integrity of the hepatic cells and the activity of the hepatic circulation, and Murchison finds evidence of a pathological order that the liver is the main source of uric acid production.

The views which point to the liver as the organ where effete nitrogenous principles are elaborated for elimination by the kidneys in the form of urea and uric acid (and the frequent occurrence in this gland of inosite, hypoxanthin, leucin and tyrosin indicate an influence of the liver in the formation of other effete nitrogenous elements), views, moreover, which make of lithiasis and lithæmia a hepatic affection, have profoundly modified the therapeutics of the present day, both from a dietetic and medicinal standpoint.

That the liver, moreover, has to do with the elaboration of peptones absorbed from the digestive canal seems also evident, as Fothergill has intimated, from the mal-nutrition which follows hepatic disturbances. According to Albertoni and Schmidt-Mulheim, the peptones when escaping into the general circulation are depressant agents "producing alarming, if not dangerous symptoms"; "these peptones normally disappear from the portal blood before it reaches the general circulation," a proof that some important change in their composition is effected in the liver.

That the liver has the remarkable property of destroying certain toxic principles — animal and vegetable poisons — has also been determined by recent observations. Claude Bernard was the first to notice the innocuousness of certain poisons — as curare — in-

[1] Continued from page 19.

[2] How the liver forms bile is unknown. If the bile acids are products of food proteids, or effete fibrin, the cholesterine would seem to be performed in the nervous system, being simply separated in the hepatic cells with the bile. It is probable that but little of the bile secreted is eliminated as such, being reabsorbed into the blood and there undergoing metabolism into less complex products which are eliminated by the lungs and kidneys. The cholesterine and bile pigment are excrementitious, and in passing out through the intestinal canal stimulate peristalsis and arrest decomposition.

troduced by the mouth, the toxic agent being rendered inert in the liver, and the effects of certain solanum alkaloids, as atropine and duboisin are retarded and minimized by the action thereon of the hepatic cells, which also, as is well known, have the property of fixing the salts of arsenic, lead and copper, and eliminating them in part in the bile. In other words, "the liver is a huge filter allowing certain nutritive matters to pass onward, while arresting other matters whose presence in the blood is deleterious." (Fothergill.)

For ages, as before said, the principal function of the liver was supposed to be the formation of bile, which, from being regarded as merely excrementitious, came afterwards to be considered a digestive fluid second only in usefulness to the gastric juice. The importance of bile as a digestive fluid has certainly been overrated, as it has been proved that digestion and assimilation are possible without it, but the facts concerning the uses of bile,— such as they are,— in the alimentary canal, (neutralizing and rendering aseptic the chyme, precipitating peptones, promoting the absorption of fats, stimulating intestinal peristalsis) were known to physiologists in the earlier part of this century. It is not so with the discovery of the glycogenic function of the liver by Claude Bernard, which dates from the years 1849–1851.

As the liver detains, modifies and elaborates the products of the digestion of azotized aliments (proteids), it does the same with the glucose elements which result from the digestion of starches and sugars; nay, more, it also forms out of albumen and fibrin, a sweet principle which it stores away in its cells, reserving it for the wants of the economy, to be either burned for the production of animal heat, or to subserve some, as yet, unexplained purpose in histogenesis. To this saccharine principle which, under the influence of contact with a peculiar animal ferment formed in the liver passes to the state of liver sugar, ($C^{12}H^{12}O^{12}$ 2 H^2O), Bernard gave the name of glycogen. Excess in the production of this sugar by the liver, or failure in its oxidation and destruction in the tissues of the economy, constitutes diabetes.

This whole question of the glycogenic function of the liver, though one of the greatest interest, is still involved in obscurity. That liver-sugar is less histogenetic than calorifacient is an inference from well recognized physiological principles. If it be chiefly as fuel for the tissues that glycogen is stored away in the liver, then Galen's view that the liver is the centre of animal heat, is not far from correct.[3] If, moreover, the liver elaborates blood materials — as the foregoing considerations seem to teach — then Galen was right in assigning to this organ a hæmatopoietic function.

In another and final number we purpose to discuss functional derangements of the liver.

[3] Pavy's exhaustive experiments go to show that this substance, which may be constituted by a splitting up of albuminoids as well as by the metabolism of hydro-carbons, is a readily oxydizable agent, subserving muscular action as well as animal calorification, and probably also promoting cell growth.

IS MEDICINE A PROGRESSIVE SCIENCE?

Under this head, Dr. Morell Mackenzie discusses, in the *Fortnightly Review* for June, a question of the greatest importance. A point, he says, meets us at the outset, whether medicine is, strictly speaking, a science at all. Although the elementary principles of physiology are as certain as any other scientific truths, the practical application of them in the treatment of disease can hardly ever possess more than a higher or lower degree of probability. The diagnosis of a case of organic disease of the heart, for example, cannot, during the patient's life, be treated as a verity of the same order as the circulation of the blood. The final test of a science is the possibility of predicting the phenomena belonging to its domain. Here the incompleteness of medical science is conspicuous. The physician can never know beforehand the precise effect which a drug will produce in a given case, or whether a particular complication will occur in the course of a familiar fever. The science of medicine may almost be said to be limited to the class of truths which adorned the mind of the natural philosopher commended by Touchstone. We know that the property of rain is to wet, and of fire to burn, and we are sure that if a man's heart stops, or if he ceases to breathe, he dies; outside the circle of such fundamental truths, we are in the realm of mere probability. Nor is there much likelihood, Dr. Mackenzie thinks, that medicine will ever take rank among the exact sciences. The problems of life are too complex to be solved by physical methods, and all other means of investigation from their very nature offer only a more or less close approximation to accuracy of result.

With all its inevitable limitations, medicine, has progressed, and will continue to progress, slowly perhaps, and too often wandering from the right path, occasionally even losing ground. The difference between the past and the present is immense. A hundred years ago, the question, Is medicine a progressive science? might almost have been answered in the negative. The science was pretty much where Harvey had left it more than a century before, while the practice was little better than that of Celsus or Galen. The science of physical diagnosis by auscultation and percussion had not been discovered, and the recognition of diseases of the heart and lungs was to the last degree conjectural, whilst, as regards other internal affections, it was the merest guess-work. Tumors were arranged in a few hap-hazard groups, surgical operations were performed without any anæsthetics; compound fractures almost necessarily involved the loss of the limb; sufferers from calculus could only obtain relief by one of the most dreadful cutting operations of surgery; ignorance of the laws of hygiene made hospitals and jails but little better than pest-houses, and the mortality from preventable diseases defied all computation.

Contrast this with the medicine of to-day. The stethoscope has made it as easy to detect a damaged heart or an inefficient lung as a broken leg. The ophthalmoscope enables us to explore the innermost

recesses of the eye, while with the laryngoscope we can have ocular proof of the condition of the windpipe. The microscope enlightens us as to the true nature of morbid growths, and such timely information often makes it possible to check their development. Anæsthetics have robbed surgery of half its terrors and half its danger. The introduction of the antiseptic method has largely increased the percentage of recoveries after severe wounds and mutilations, and has also done much to insure the safety of the lying-in-chamber. Litholopaxy has taken the place of the operation of cutting for stone. Small-pox is no longer the scourge which it once was; typhoid fever still claims many victims, though it is being gradually driven off the field by an enlightened hygiene; typhus is almost unknown, except in the lowest and most squalid haunts of poverty. Madness is now treated as a bodily disease, not as the curse of God or the spite of the devil. The active principles of the most important medicines have been separated, so that the agent can be administered in a purer and more efficient form, while the physiological action of the drug is determined by experiment, and is taken as the index of the therapeutic value. Less physic is given, and it is prescribed with a clearer purpose. Better still, more attention is paid to the diet and the hygienic surroundings of the patient, and the knowledge of the natural evolution of diseases has resulted in a judicious reserve in the use of powerful medications. The doctrine of the bacterial origin of contagious diseases has given rise to systems of prevention whose success leads to the hope that the specific fevers, and even consumption, syphilis, and cancer may yet be banished from among men.

Having shown that the art of healing has made very decided progress, the question remains: Will it continue to advance? The answer must be emphatically in the affirmative. Medicine has the threefold function of curing, preventing, and alleviating human suffering. As regards the first, we have made comparatively little headway, but if we do not cure more, we at any rate "kill less," and that of itself is a great deal. It is not probable that (as Prof. Huxley thinks), a remedy for nearly all forms of disease will sooner or later be found in drugs. Means of preventing should be sought for, rather than specific antidotes, which have seldom been discovered except by accident, and which often fail in time of need. Much progress has already been made in the prevention of disease, and it cannot be doubted that in this direction lies the way for medicine to follow if it is to be truly progressive. Apart, however, from either cure or prevention, there is a vast field for the power of medicine to display itself. The veriest sceptic who has ever been ill himself or witnessed sickness in others, must confess that the physician can allay pain, ward off danger, soothe apprehension, and infuse hope. Even when the issue is fatal, is it to be counted as nothing that death, although victorious, has been disarmed of its sting of physical anguish? It may be boldly asserted that if medicine never wrested a single life from an untimely grave, it would still deserve supremely well of humanity for its power of relieving pain. In nothing is the progressive character of the healing art more conspicuous than in the constant additions which are made to our means of dealing with troublesome symptoms, which even if they do not threaten life, make it miserable and perhaps useless. If it be the destiny of mankind to have disease always going about among them, seeking whom it may devour, it is still much that more and better safeguards should be found against it; that its ravages should be lessened; and that our life, into which, brief as it is, such an amount of suffering may be compressed, should be rendered less and less subject to pain, and freer from bodily discomfort. On this ground alone medicine may well take its stand as a progressive science.

Other points touched upon by Dr. Mackenzie are: the increasing zeal for research, and especially for original investigation; the growing *esprit de corps* among physicians the world over; the coöperative methods in vogue, such as the collective investigation of diseases and remedies; and the wonderful diffusion of knowledge by medical societies (which are becoming more and more cosmopolitan), and especially by the medical press, which never had such power and influence as now.

MEDICAL NOTES.

— Dr. Brown-Séquard was elected member of the Paris Academy of Sciences in the section of medicine and surgery at its last meeting. He was admitted by a large majority, although his competitors included such men as Bouchard, Germain-Sée, Jaccoud, Hayem and Richet.

— The *British Medical Journal* records the following case of spontaneous transformation of morphine into apomorphine: A solution of hydrochlorate of morphine for subcutaneous injection (3 per cent.) was ordered for a patient, and its injection was promptly followed by relief of the pain, without any gastric symptoms whatever. Eleven months later the patient made use of the same solution, but this time the injections gave rise immediately to violent and uncontrollable vomiting. The solution was given to a well-known analyst at Paris for examination, and he ascertained that apomorphine was present, thus accounting for the sickness. He recommended, in consequence, that solutions of the salts of morphine should never be kept longer than four weeks, and that freshly prepared solutions should not be mixed with the old.

— Given a spacious theatre, crowded during an evening performance for a period of hours, what is the difference of the effects on its atmosphere produced by the electric light or by gas, particularly as to the temperature and the generating of carbonic acid? This problem Dr. P. Renk, Professor of Hygiene at Munich, has just set himself to solve. Taking the

Theatre Royal of that city, which is lighted by 1,400 lamps on the Edison system, he tested the two kinds of illuminants, with the following results: During a representation which lasted from 5.30 P.M. to 10.15 P.M., and which was witnessed by 1790 people, he found that while the rise in temperature in the pit was 11.1° Centigrade with gas, it was only 7.7°, also Centigrade, with the electric light; and that in the upper gallery it was 10.7° with the former, and not more than 7.4° with the latter. As to the increase in the production of carbonic acid, the results were equally important. In the pit it was as 2176 with gas to 1221 with the electric light, and in the upper gallery as 2855 with the first to 1430 only with the second.

— It is said that the average price of drugs has fallen, within the last three years, fully one-third. In some special instances, the cause for the decline is apparent; in others, authorities differ. In the case of quinine, there has been a reduction from $3 in 1880 to 52 cents at present. In opium, the course of prices has been similar, the ruling quotation of 1880 being $4.75 a pound, against $1.75 to-day. In the case of quinine, the supply has been vastly increased of late years by the cultivation of the cinchona tree in Ceylon and Java, and the production of a richer bark; a bark yielding two per cent. was formerly considered merchantable, whereas the present average yield is more than double that. The production has doubled, while the demand has remained the same. The present price returns so poor a profit to the growers of the bark, that many plantations have been destroyed during the last year to make way for tea or other culture. Quinine, moreover, was some time since, by a change in the tariff law, put on the free list, while opium remains subject to duty. Opium varies in price according to the stringency of laws against its importation or use in various countries, the American market being at present so over-stocked that a lot was recently sold at less than $1.75 a pound which cost $4 not more than a year ago.

— The President is having an opportunity to brush up his medical knowledge in connection with the special pension bills, of which he has received so many, and which he seems inclined to scrutinize so closely. In a batch of twenty vetoes which he returned at one time last week, for instance, was the case of one man who filed his declaration for a pension in 1884, alleging that he contracted chronic diarrhœa in the Black Hawk War. The records show that he served from April 18, 1832, to May 28, 1832. In vetoing the bill for his relief, the President says: "I am inclined to think it would have been a fortunate thing if, in this case, it could have been demonstrated that a man could have thrived so well with the chronic diarrhœa for fifty-four years, as its existence in the case of this good old gentleman would prove. We should then, perhaps, have less of it in claims for pensions. The fact is, in this case, there is no disability which can be traced to the forty days's military service of fifty-four years ago, and I think little, if any more infirmity than is usually found in men of the age of the claimant." In vetoing the bill granting a pension to another man, who claims that he contracted blindness, the result of rheumatism incurred in the service, the President says that there seems to be no testimony showing the soldier's condition from the time of his discharge to 1880, a period of fifteen years. The President continues: "After nineteen years had elapsed since his discharge from the army, a pension is claimed for him, upon a very shadowy allegation of the incurrence of rheumatism while in the service, coupled with the startling proposition that this rheumatism resulted just previous to his application in blindness. Upon medical examination, it appeared that his blindness was caused by amaurosis, which is generally accepted as an affection of the optic nerve. I am satisfied that a fair examination of the facts in this case justifies the statement that the bill under consideration can rest only upon the grounds that aid should be furnished to this ex-soldier because he served in the army, and because he, a long time thereafter, became blind, disabled, and dependent." Considering that five hundred and sixty-five of these special pension acts have been signed, and only ninety vetoed, it cannot be said the President's attitude is hostile to the veterans of the war. It is, however, critical, as when he points out that the wound for which one man asked compensation was received while on a private pillaging expedition in North Carolina, when he was hunted down by the Home Guards.

NEW YORK.

— Fourteen cases of small-pox have been discovered in Williamsburgh within the past fortnight, all of which were traced to a young Polish immigrant who landed at Castle Garden a short time since.

— During the past week a young son of Dr. W. H. Newell, of Jersey City, who was bitten some weeks ago by a dog supposed to be rabid, has been undergoing inoculations by the Pasteur method at the Carnegie Laboratory, at the hands of Dr. Valentine Mott, who has been propagating virus derived originally from the rabbit inoculated by Pasteur, which he brought from Paris in May. Very little money has, as yet, been subscribed for the support of a Pasteur Institute in New York, and it seems probable that the project will be abandoned, at least for the present.

—The recent intense heat has produced a marked increase in the mortality of the city. During the twenty-four hours, ending at noon, July 17th, 178 deaths were reported to the Health Department, 64 per cent. of which were among children under five years of age. During the succeeding twenty-four hours 169 deaths reported, of which 125 were of children under five. The corps of visiting physicians for summer work among the tenement-house population, which have for a number of years done excellent work in diminishing the rate of infant mortality during the hot weather, have not been appointed this season, as the Board of Estimate and Apportionment failed to make

any appropriation for the purpose, and the regular funds of the Board of Health are not sufficient to include the extra expenditure involved.

As a consequence the physicians of the "Sick Children's Mission" of the Children's Aid Society, which has for a considerable period carried on an independent work among the poor, finds a large increase in the demands made upon it, and it has been found necessary to employ additional physicians to visit the crowded tenement quarters of the east side. The system of medical aid is so arranged that a physician reaches the bedside of a sick child in any part of the city below Central Park, within an hour from the time that the case is reported at the headquarters of the Mission. A sanitarium for sick children is also conducted by the Society at Coney Island.

Miscellany.

THE AUTOPSY OF KING LOUIS OF BAVARIA.

THE post-mortem examination of the late king of Bavaria, made by Professor Rudinger, was confirmatory of the view expressed by the alienists as to his mental condition, and of their unfavorable prognosis. Extensive degenerative changes were found in the skull, the brain and its membranes consisting in part of abnormal development, partly of chronic inflammations of old and recent date. The scalp was thick and very vascular. The skull was small in proportion to the size of the body, and somewhat asymmetrical, the diagonal diameter from the left of the forehead to the right of the occiput being 17.2 centimètres, and from right of the forehead to the left of the occiput 17.9 centimètres. The roof of the skull was extraordinary thin, its greatest thickness being three millimètres (0.12 inch). The coronal and sagittal sutures were completely obliterated on the inside of the skull. On the inner surface of the frontal bone, on both sides, were a number of large and small bony growths. The superior longitudinal sinus was excessively wide behind and remarkably narrow in front, near the ethmoid bone. Groups of Pacchionian granulations projected into the interior of the sinus. The dura mater was generally much thickened; in the frontal region especially it was vascular and externally shaggy; a bony growth, two millimètres in height, was found here. The left petrous bone showed a projection a centimètre in diameter at the base, corresponding to a depression in the temporal lobe of the cerebrum. The sella Turcica was asymmetrically thickened, porous and fragile in a great part of its extent, as was also the anterior fossa of the base of the skull. All the sinuses in the base of the skull were filled with dark fluid blood. The brain (without the dura mater) weighed 1349 grammes (47½ ounces). The arachnoid, over a great part of both hemispheres, was thickened, and had a turbid white appearance. Over the median end of the left anterior central convolution, and the beginning of the first frontal convolution, the arachnoid and pia mater were adherent over a space of the size of a shilling, and formed a thick hard mass, by the pressure of which the corresponding part of the skull was reduced to the thinness of paper. On the surface of the skull, pretty equally on both sides, portions of the convolutions appeared shrivelled, especially the commencing parts of the three frontal convolutions, the middle end of the anterior central convolution, and the parts surrounding the middle division of the postcentral furrow. The substance of the brain was vascular and rather soft. The heart and lungs were healthy. There was chronic catarrh of the stomach. The liver was congested; the spleen was enlarged; and the kidneys were large, but normal. The body was 6 ft. 3 inches in length, and the circumference of the skull 40 inches.

AN UNUSUAL CASE OF EXTRA-UTERINE PREGNANCY.

A CASE of suspected extra-uterine pregnancy was recently reported by Dr. Blackwood, in the *Philadelphia Medical Bulletin*. The patient, whose age is not stated, was the mother of two children. In December, 1883, she had an attack of menorrhagia, which was treated by faradism of the uterus, and she menstruated normally early in January, 1884. She had connection on January 8th, for the first and only time since early in December. The intra-uterine treatment, by means of caustic applications, was resumed on January 15th. Early in February, severe abdominal pains were complained of, and relieved by morphine. The uterine applications were discontinued, as the Fallopian tubes on either side were perceptibly dilated. Since menstruation, ten applications had been made to the interior of the uterus, which, Dr. Blackwood affirms, was empty. Signs of impregnation, however, showed themselves, although no trace of the fœtus could be discovered. By the middle of March, a globular mass, of the size of a large walnut, was detected above the right groin. The tumor was very mobile, not tender, and was diagnosed to be a tubal pregnancy. Electricity was employed up to fifty-nine volts, with the object of arresting the development of the fœtus. In the course of a few days, the mass disappeared, and the patient became very weak and prostrate. A fortnight later, the tumor could again be detected, but was more central in position. The sound apparently showed the womb to be empty, and it could be drawn away to the left, and separated completely from the tumor. Dr. Blackwood was naturally very anxious about the case. By the end of April, the fœtus, which had been coming gradually nearer the uterus, had entered its cavity, and the internal os had closed. Ultimately, normal labor took place in the following December, fully six weeks beyond term, without complications during or after. Dr. Blackwood suggests that the delay in development may have been attributable to the employment of electricity, but he is quite at a loss to explain the other curious features of the case.

THE CARE AND DISPOSAL OF THE DEAD.

THE *Sanitary Engineer*, while inclined to favor cremation, does not think it necessary that there should be any restriction upon the liberty of the individual in this regard. It says:

"The great argument used by the advocates of this last idea is that earth-burial is dangerous to the public

health because of the air and water pollution which it produces, and especially, because it may thus be the means of the transmission of the germs of contagious disease. The effects of cemeteries upon the health of those living in their vicinity has been extensively and carefully investigated by competent inquirers in recent years, and the result is that there is no evidence as to the production or spread of disease from such a source. Of these investigations, one of the most interesting was that made in Saxony to determine the changes which occur in bodies buried in the ordinary way, and the results of which were reported by Dr. V. Rheinhard in 1882. A number of bodies which had been buried for different lengths of time were disinterred, and their condition carefully noted. This was done for various kinds of sepulchres, and for the rich as well as the poor. It was found that in all soils the soft parts of the adult human body are completely destroyed in seven years, and that, as a rule, fœtor disappears in three months, unless the body has been placed in an air and water tight burial-case. The clothing resists changes longer than the corpses. No proof was found that the health of those dwelling near churchyards was thereby injured.

The chief danger to health from suburban cemeteries is from the pollution of subsoil water which they may occasion. The amount of this danger depends in part on the geological structure and surface topography of the ground, and the direction of flow of the subsoil water, and in part on the distance of wells or springs from the cemetery.

In attempts to protect or promote the public health, it is wise, as a rule, to deal first with those dangers which are the greatest, the most obvious, and the easiest remedied, and not to run the risk of wasting force for want of concentration of effort. The dangers to health which are connected with the dead are chiefly connected with the mode of caring for the body prior to its interment; in comparison with these the dangers due to cemeteries are comparatively insignificant. The spread of contagion by funerals, the keeping of a dead body for several days in the house, and, in the case of the poorer classes, in the living rooms of the family — these are the first things to be guarded against.

The most urgent need in our large cities is for small mortuary houses located in or near the centres of the tenement-house and poorer population, to which houses the body can be taken immediately after death, and be properly cared for, instead of being left in the bedroom of the family.

None but those who have themselves seen what occurs when a death takes place in a family occupying two rooms in a tenement-house can appreciate the diminution of suffering and of danger to the public health which a few well-located and properly-managed houses for the reception and care of the dead would cause in a crowded city.

REPORTED MORTALITY FOR THE WEEK ENDING JULY 3, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Malarial Fevers.	Diph. and Croup.
New York	1,439,039	752	392	35.75	13.39	24.57	1.04	5.59
Philadelphia	971,363	—	—	—	—	—	—	—
Brooklyn	690,000	283	158	12.95	12.60	1.40	.70	4.90
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	165	42	9.76	18.30	1.83	—	5.49
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	228	130	32.12	11.00	25.96	2.20	.44
Cincinnati	325,000	111	53	27.90	15.30	1.80	8.10	—
New Orleans, June 5th,	238,000	117	38	12.75	13.60	1.70	7.65	—
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	77	—	28.38	15.48	18.06	—	2.58
Pittsburgh	190,000	98	62	33.76	3.06	20.40	—	4.08
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	43	14	13.98	13.98	9.32	—	2.33
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	—	—	—	—	—	—	—
Charleston	60,145	45	20	20.00	13.33	11.11	—	4.44
Worcester	68,383	19	11	36.82	10.52	10.52	—	15.78
Lowell	64,051	29	9	—	—	—	—	—
Cambridge	59,660	16	4	12.50	6.25	—	—	12.50
Fall River	56,863	22	13	31.85	—	13.65	—	—
Lynn	45,861	9	4	—	22.22	—	—	—
Lawrence	38,825	10	4	40.00	10.00	40.00	—	—
Springfield	37,577	—	—	—	—	—	—	—
New Bedford	33,393	7	3	28.56	14.28	28.56	—	—
Somerville	29,922	—	—	—	—	—	—	—
Salem	28,084	14	6	7.28	7.28	—	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	8	3	50.00	12.50	25.00	—	25.00
Taunton	23,674	5	1	20.00	20.00	—	—	20.00
Haverhill	21,795	—	—	—	—	—	—	—
Gloucester	21,713	4	0	—	—	—	—	—
Brockton	20,783	—	—	—	—	—	—	—
Newton	19,759	4	1	—	—	—	—	—
Malden	16,407	8	2	—	25.00	—	—	—
Fitchburg	15,375	—	—	—	—	—	—	—
Waltham	14,609	2	0	—	50.00	—	—	—
Newburyport	13,716	3	0	—	33.33	—	—	—
Northampton	12,896	—	—	—	—	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,079: under five years of age 970: principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 550, diarrhœal diseases 337, consumption 267, lung diseases 118, diphtheria and croup 87, malarial fever 24, scarlet fever 24, measles 20, whooping-cough 19, typhoid fever 15, cerebro-spinal meningitis 12, puerperal fever seven, erysipelas four, small-pox New York) one. From scarlet fever, Brooklyn nine, Pittsburgh eight, New York four, Cincinnati, Providence and Salem one each. From measles, New York nine, Pittsburgh three, Brooklyn, Baltimore, and Charleston two each, Cincinnati and District of Columbia, one each. From whooping-cough, New York nine, Brooklyn five, Pittsburgh two, Boston, Baltimore and District of Columbia one each. From typhoid fever, Baltimore four, New York and New Orleans three each, Boston two, District of Columbia, Pittsburgh and Fall River one each. From cerebro-spinal meningitis, New York five, Fall River three, District of Columbia two, New Orleans and Worcester one each. From puerperal fever, New York two, Brooklyn, Boston, Baltimore, Cincinnati and District of Columbia one each. From erysipelas, New York two, Cincinnati and Worcester one each.

In 15 cities and greater towns of Massachusetts, with a population of 800,772 (population of the State 1,941,465), the total death-rate for the week was 18.76 against 18.02 and 15.49 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending June 26th the death-rate was 17.0. Deaths reported 2,857: infants under one year of age 746; acute diseases of the respiratory organs (London) 194; measles 96, diarrhœa 83, whooping-cough 56, fever 32, scarlet fever 24, diphtheria 21.

The death-rates ranged from 12.4 in Cardiff to 37.1 in Preston; Birmingham 16.0; Bradford 16.6; Hull 14.4; Leeds 19.1; Leicester 13.8; Liverpool 18.0; London 15.4; Manchester 20.5; Newcastle-on-Tyne 20.9; Nottingham 18.7; Sheffield 12.9.

In Edinburgh 20.9; Glasgow 22.6; Dublin 24.7.

For the week ending June 19th, in the Swiss towns, there were 36 deaths from consumption, lung diseases 14, diarrhœal diseases 14, measles eight, small-pox two, diphtheria and croup two, scarlet fever, whooping-cough and erysipelas each one.

The death-rates were: at Zurich 11.5; Geneva 12.1; Basle 12.6; Berne 17.1.

The meteorological record for week ending July 3, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
Saturday, July 3, 1886.	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...27	29.791	67.0	76.2	58.3	70.0	44.0	83.0	65.7	W.	N.W.	N.E.	16	22	12	C.	F.	C.	—	—
Monday,...28	29.988	60.4	71.2	55.4	80.0	76.0	77.0	77.7	N.	E.	S.W.	10	7	14	O.	C.	C.	—	—
Tuesday,..29	29.882	71.1	81.7	56.3	70.0	41.0	58.0	56.3	W.	W.	N.	10	22	11	C.	C.	O.	—	—
Wednes., 30	30.112	66.9	75.5	57.4	48.0	16.0	53.0	39.0	N.W.	N.	N.W.	5	12	7	C.	C.	C.	—	—
Thursday, 1	30.165	69.7	82.1	55.6	60.0	27.0	60.0	49.0	N.W.	S.W.	W.	5	8	14	C.	C.	C.	—	—
Friday, ... 2	30.058	69.9	82.0	58.9	56.0	38.0	67.0	53.7	W.	W.	W.	12	10	13	F.	O.	O.	—	—
Saturday, . 3	29.991	72.3	84.1	61.8	63.0	45.0	78.0	62.0	N.W.	E.	S.E.	8	10	2	C.	C.	C.	.3	.02
Mean, the Week.	29.998	68.2	78.9	57.7				57.6											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

SOCIETY NOTICE.

NEW YORK STATE MEDICAL ASSOCIATION. FIFTH DISTRICT BRANCH. Preliminary Notice.— The second annual meeting of the Fifth District Branch will be held in Brooklyn, on Tuesday, October 12th, 1886. There will be a morning and afternoon session. All Fellows are solicited to contribute to the meeting, either by reading papers, notes or communications, or by exhibiting specimens. The Secretary desires to be notified of the title of any paper to be offered as early as convenient.

J. G. PORTEOUS, M.D., *President.*

E. H. SQUIBB, M.D., *Secretary.*
P. O. Box 94, Brooklyn.

BOOKS AND PAMPHLETS RECEIVED.

Medical and Surgical Directory of the United States, comprising List of Physicians and Surgeons. Arranged by States with School practiced, Post-Office Address, Population and Location, Date and College of Graduation, Medical Colleges, Hospitals, Sanitariums, Asylums, etc. R. L. Polk & Co., Publishers. Tribune Building, Detroit, Michigan, and Elsewhere.

Anæsthesia. Who made and developed this Great Discovery? A Statement "Delivered upon the Mellowing of Occasion," by G. Q. Colton. New York: A. G. Sherwood & Co. 1886.

An Introduction to General Pathology, Founded on Three Lectures delivered at the Royal College of Surgeons, London, 1886. By John Bland Sutton, F.R.C.S., etc. Philadelphia: P. Blakiston, Son & Co. 1886.

Dermatologische Studien. Zweites Heft. Iethyol und Resorcin als Repräsentanten der Gruppe reduzicrender Heilmittel von Dr. P. G. Unna. Hamburg und Leipzig. Verlag von Leopold Voss. 1886.

The Modern Treatment of Stone in the Bladder by Litholapaxy. A description of the operation and instruments, with cases illustrative of the difficulties and complications met with. By P. J. Freyer, M.A., M.D., M.Ch. London: J. & A. Churchill. 1886.

The Private Treatment of the Insane as Single Patients. By Edward East, M.R.C.S., L.S.A., Member of the Medico-Psychological Association. London: J. & A. Churchill. 1886.

The New York Society for the Prevention of Contagious Diseases. Announcement.

Bright's Disease and Allied Affections of the Kidneys. By Charles W. Purdy, M.D., Queen's University, Professor of Genito-Urinary and Renal Diseases in the Chicago Polyclinic, etc. 8vo., 288 pages, with 18 illustrations. Cloth, $2. Philadelphia: Lea Brothers & Co. 1886.

Directions to Parents of Deaf Children for their Treatment from Infancy, in order that they may learn speech and lip reading. By Miss Mary S. Garrett, Principal of School for teaching Deaf Children to Speak. Philadelphia, Pa.

Transactions of the Medical Society of the State of West Virginia. Nineteeth Annual Session held at Charlestown, May 19 and 20, 1886.

Enucleation with Transplantation and Reimplantation of Eyes. By Charles H. May, M.D., Instructor in Ophthalmology, New York Polyclinic, etc. (Reprinted from the Medical Record, May 29, 1886.)

Circulars of Information of the Bureau of Education. No. 5. 1885. Physical Training in American Colleges and Universities. By Edward Mussey Hartwell, Ph.D., M.D., of Johns Hopkins University. Washington Government Printing Office. 1886.

Fortieth Annual Announcement of Starling Medical College. Together with Catalogue, etc., for the Session of 1886-87. Columbus, Ohio. 1886.

Registration of Births, Marriages, Divorces and Deaths in New Hampshire for the Year 1884.

A Manual of Practical Therapeutics considered with Reference to Articles of the Materia Medica. By Edward John Waring, C.I.E., M.D., Fellow of the Royal College of Physicians, London. Edited by Dudley W. Buxton, M.D., B.S., London. Member of the Royal College of Physicians. Fourth Edition. Philadelphia: P. Blakiston, Son & Co. 1886.

Original Articles.

ALBUMINURIC RETINITIS.[1]

BY JOHN G. BLAKE, M.D.

RENAL complications in pregnancy are always causes of anxiety to the physician. The uncertainties and probabilities are ever in mind, and the satisfactory termination of the case is a relief which most of us have had the pleasure of experiencing at one time or another. When vision is affected and the case becomes one of threatened blindness unless premature delivery or abortion is resorted to, there arises a grave question of judgment as to the respective rights of mother and child. The proper discussion of the question belongs rather to the oculist than to the obstetrician, and it is with the hope of having a little light shed on a subject where patient and physician alike are blind, that I venture to report the following case seen in consultation.

Mrs. W., twenty-six years, when six months pregnant with her first child, noticed that her sight was becoming impaired. She had not suffered from any of the common discomforts of early pregnancy nor was she now otherwise affected: neither was there marked swelling of the feet or face, pain in the back, head, vomiting or marked diminution of urine.

Her physician, after a brief course of treatment, referred her to an oculist connected with one of our public charities. A careful examination of the eyes revealed loss of vision to the extent of fifty per cent., and an analysis of the urine showed a small amount of albumen and some granular casts. Premature labor was strongly advised as soon as the child became viable, and abortion at any time that the sight became worse or the patient blind. Hæmorrhage into the macula was described to be the condition causing loss of sight, with the possibility, and indeed, strong probability, of its increase if pregnancy was allowed to continue to full term. The case went on for some weeks until the seventh month was reached, when I was requested to see it with reference to the advisability of inducing premature labor. I found a fair-sized, rather slight woman, in quite good health, showing externally no signs of albuminuria except perhaps more or less sallowness about the face, but no œdema, either of face or lower extremities; neither was she suffering from headaches, vomiting, or pains in the back; her vision continued about the same as when she visited the oculist, and showed neither improvement nor retrogression. I had the urine carefully examined with the result of finding only a small amount of albumen, and a few granular and fatty casts. Considering the circumstances of the case, that the sight had not grown worse, that the induction of premature labor was a pretty serious operation, that we could watch the case constantly and could interfere at any time the symptoms would justify, I advised against an operation. Nothing occurred during the remaining period until the completion of pregnancy. Labor began at 9 P.M., progressed favorably through the night, and was completed with forceps next morning, without ether, simply because the patient was not strong enough to finish it unaided. There were throughout no uræmic symptoms. The child was alive and well, and both mother and child have continued doing perfectly well since. The gratifying feature of the case is that the mother has now, three months after the birth of the child, recovered her sight almost entirely.

The points of interest in cases like the above, may be considered as first, loss of sight partial or complete, being liable to occur in acute albuminuria, what percentage of cases recover the sight after labor and what percentage fail to recover it. Is the condition of the structures of the eye similar to the condition where uræmic convulsions take place and where also blindness of a temporary character exists? What are the chances of hæmorrhage into the macula undergoing absorption and what is the condition of the tissues of the retina in acute albuminuria; finally is blindness, partial or complete, liable to arise during pregnancy from causes other than albuminuria; and is a slight form of albumenuria which does not produce constitutional symptoms liable to produce loss of vision.

While a single case may not be of any great value in deciding what our duty is in a similar one, it at least shows that all do not become blind, or fail to recover their sight, and it leaves some hope that a difficult operation, dangerous to the child if not to the mother, need not be assumed to be absolutely necessary where albumen and a few casts exist without other indications of disease.

Instead of quoting the opinions of oculists on this subject, I trust the views held by the profession on the above points will be given by one of themselves.

[1] Read before the Obstetrical Society of Boston, April 10, 1886.

THE "DUNBAR" CASE.[1]

BY F. K. PADDOCK, M.D., OF PITTSFIELD, *Medical Examiner.*

AT 10.45 P. M., July 4th, 1885, I received notice that George S. Dunbar was found lying in Water street, Pittsfield, dead, with a wound in the back of his head. I immediately repaired to the place, and viewed the body at 11 o'clock P. M.

That part of Water street where the body was found is fifty feet in width, bounded on the south side by the Housatonic River, and on the north by a picket fence, back of which is a vacant lot. The street has no sidewalks. The travelled roadway is fifteen feet in width. On the north side of the roadway there is a space ten feet in width, extending to the fence, covered with grass. South of the roadway, the grass extends down the river bank twenty-five feet to the water. The street is unlighted at night, and the only building on that part of the street is the gas house.

The body lay parallel with the street, upon the grass between the roadway and the fence, with the head toward the east. When first discovered, the body was lying face downward; but it had been rolled over by the person who discovered it, and I found it lying upon the back, face upward. The night was very dark, and the view was made by the aid of lanterns. The body was warm; the face, back of the head, the adjacent hair, and the back of the neck, were discolored with fresh blood. The lids of the left eye were discolored and greatly swollen, presenting the characteristic appearance of a bad black eye, such as ordinarily results from a stunning blow upon the tissues covering the orbit.

At the back of the head, in the occipital region, just

[1] Read at the meeting of the Massachusetts Medico-Legal Society, February 3, 1886.

to the right of the median line, was a wound of sufficient size to admit of the little finger being passed through the skull into the brain, from which warm blood slowly oozed.

Lying beside the body, evidently on the spot occupied by the head before the body was turned over, was his hat, the brim of which was covered with blood, and there was a blood stained spot of grass under and beside the hat, where the blood had evidently trickled from the wound in the back of the head.

The body was dressed in a black cassimere suit. The coat was a loose sack, buttoned at the upper button. The examination of the pockets revealed the absence of his pocket-books and money. The pockets of the coat contained only a white cambric handkerchief and three pistol cartridges, No. 32 calibre. His vest pockets contained a watch key and a cheap Waterbury watch, which was running. In his trousers pockets were a bunch of keys, and two or three blank gas-bills.

Upon the ground, close to the right ankle, as the body lay upon the back, was found a 32-calibre revolver, with five chambers; three of the chambers were empty, one contained a loaded cartridge, and the remaining one, an empty shell. To the handle of the revolver was tied one end of a piece of strong brown twine. This twine measured just ninety feet in length, and lay on the grass along the side of the roadway, the free end being about fifty feet from the body.

It was fastened to the handle of the revolver in such a way as to form a loop, which could be made to hold the hammer in a position half-way between half and full cock. When so placed, the weapon could be discharged by pulling on the string; this would free the hammer and allow it to fall. Experiments made with the revolver afterward showed that the cap of the cartridge would not explode every time the hammer dropped, but would average once in five or six times.

The chief witness at the view was a young man, who discovered the body as he was walking along the street, shortly after ten o'clock, on his way home. He first supposed the body to be that of a drunken man, and he called to two companions he had left upon the river bridge only a moment or two previously, to come to see who it was. One of them lighted a match and identified Dunbar. They then went to the gas house, procured a lantern, and, accompanied by two employés at the gas-works, returned to the body, which they rolled over on to the back, and discovered that life was extinct.

A wagon was procured, and I had the body conveyed to his residence on Howard street. Before leaving the house for the night, I had a search made for Dunbar's wallets, in which he was known to usually carry considerable money, thinking that he might have left them at home when he went out that evening, but they could not be found.

The autopsy was made 10.15 A. M., July 5th, twelve hours after death, in the presence of Drs. J. F. A. Adams, Henry Colt, Jr., William L. Paddock, H. W. Dewey, and S. C. Burton. The body was well nourished and muscular, but without much adipose. Rigor mortis was well marked. The signs of injury were confined to the head only. The face was badly disfigured by the ecchymosed and swollen condition of the lids of the left eye. There was no other appearance of injury to the face. The blood was carefully sponged from the hair and scalp about the wound in the back of the head. The hair was not singed, nor could there be found any powder mark on the scalp. The wound through the scalp was round in shape, and a little larger than the opening through the skull. The edges of the scalp wound, as well as the bone forming the circumference of the opening through the skull, were blackened by lead which had been rubbed off from the bullet in passing through.

The calvaria was removed. The dura mater was found unusually adherent to the skull. In the posterior portion of the falx cerebri was a deposit of bone, shaped like a button, three-fourths of an inch in diameter, and one-eighth of an inch thick. The wound in the skull was irregularly round and situated in the occipital bone, one-third of an inch to the right of the median line, very near the occipital protuberance, just below the semi-circular ridge. The appearance of the wound indicated that the line of flight of the bullet was at right angles with that portion of the bone wounded. Several small spicula of bone were found in the lacerated cerebellum. The wound passed below the right lateral sinus, and extended upward and forward, through the posterior lobe of the right hemisphere of the cerebellum, through the posterior and middle lobes of the right hemisphere of the cerebrum, where, at the upper surface of the middle lobe, the wound changed its direction and passed downwards, forwards, and slightly inwards, and terminated in the anterior lobe of the cerebrum, close to the longitudinal fissure, where the bullet was found, in a position halfway between the anterior and posterior borders of the right anterior lobe, just above the right lateral ventricle. The brain substance was very much lacerated along the course of the wound. The left hemisphere of the brain was uninjured, and apparently in a perfectly normal condition.

The internal surface of the skull was searched with great care to discover any fracture that might have resulted from the concussion of the bullet, or from other sources, but none could be found.

The bone was removed from the roof of the left orbital cavity, as well as the cribriform plate of the ethmoid in order to discover if there was any connection between the bullet-wound and the contusion or injury to the left eye. The orbital cavity was found full of clotted blood, which had infiltrated the cellular tissue behind and around the ball, pressing it forward as far as the optic nerve permitted. The cellular tissue of both lids was also fully infiltrated. There was clotted blood in the left nares, but the bone was found uninjured, and there was not any fracture extending from the wound in the occipital bone made by the bullet.

The bullet was very much flattened and its circumference was irregular and jagged, and presented the appearance of having struck the bone squarely on end; the base of the bullet was not bruised and exhibited the creasing marks of the barrel of the revolver and exactly fitted the empty shell found in the chamber of the weapon. The three cartridges found in the coat pocket exactly resembled those in the revolver.

The developments attending the view and the autopsy rendered the case problematical. Was it suicide or was it murder? Did this man shoot himself or was he shot by another? In order to intelligently consider these questions and properly weigh the evidence favoring the two theories, it is necessary that

we should know something of the history of the deceased.

George S. Dunbar was born in 1836, in Pittsfield, where he lived until his death. His father kept a grocery store and a fish market. He was educated at the Grammar School. At the age of sixteen he was apprenticed to a mechanic and learned the machinist's trade. After attaining his majority and finishing his apprenticeship, he was employed in a woolen factory as machinist. He was married at twenty-eight years of age, and his wife kept the factory boarding-house, while he worked at his trade in the mill. At the age of thirty-three, he was appointed superintendent of the works of the Pittsfield Gas Company, a position he had ably filled for sixteen years at the time of his death. Soon after receiving the appointment of superintendent, he bought a house on Howard street, near the gas works, where he has since lived. Physically he was strong, vigorous, and very active. Although rather spare in form, he was muscular and possessed great endurance. He never had any severe illness, with one exception, and that was a temporary attack. On several occasions he had been overcome by the inhalation of illuminating gas, while at work in an excavation endeavoring to find a leak in the gas-pipe. About four years ago, he was carried home in a paralyzed condition from this cause, and for twelve hours afterward, he was delirious and had several severe convulsions, during which opisthotonos was well marked. He recovered in forty-eight hours and was at work again.

His duties as superintendent were arduous. Leaks in the gas-pipes, in various parts of the town, as well as the locating and laying of new pipes he attended to. The monthly and quarterly record of the numerous meters, he took himself, besides making out and collecting a great many of the bills.

He was in the habit of carrying with him in a large wallet a considerable amount of money, varying from fifty to two hundred dollars, which he took no pains to conceal, and exposed it freely whenever he happened to be about town when making change, as he collected the gas bills. He was called upon by everybody in town using gas, to correct any fault found with the illuminating vapor. The prompt fulfilment of all these duties demanded constant activity early and late, and Mr. Dunbar was always equal to the emergency. He was strictly temperate and scrupulously honest in all transactions. However trying or vexatious were the demands and whims of unreasonable gas-takers, he always appeared cheerful and unruffled, and faithfully endeavored to relieve the cause of dissatisfaction. He had a pleasant home and a happy family, consisting of a wife and four children. His salary as superintendent was more than sufficient to support them comfortably, and he was able to save a small amount of his annual income. Some eight years ago, he and his brother bought some stock in Wall street, not not as a speculation at first, but as an investment. In the course of a few years, however, they became somewhat familiar with the stock-market and were more or less infatuated with the excitement and the possibilities of dealing in stocks, and they began to speculate, at first carefully and successfully, so much so that when the brother died of cerebro-spinal meningitis in 1881, they were reported to have made between twenty and forty thousand dollars. It is a singular if not a significant fact, that George's death occurred on the fourth anniversary of his brother's death. It is not known that George met with any serious losses, subsequently, until the spring of 1884, when, by an unfortunate and unexpected change in the price of stock which he had bought on a margin, he lost all that he had made; and it is supposed that he also lost a small amount that he had borrowed. For the fifteen months following this reverse there is no evidence that he dealt in stocks at all, and in April, 1885, he settled with his broker in New York and withdrew the balance of his account. He did not allow his interest in stocks to interfere with his duties as superintendent of the gas company. The business was carried on by telegrams through brokers in New York. He developed a considerable degree of ingenuity in the line of his business as superintendent. He made several practical inventions, one of which is very successfully used for lighting and another for extinguishing the street lights at night. Within the last five years he has paid considerable attention to life-insurance as an investment. As soon as it was discovered by insurance agents that he was interested in the subject, he was beset by representatives of various companies. At first he stated that he wanted insurance to the amount $25,000. He got $21,000 in regular life-insurance companies, but finally several declined to insure on account of his having had convulsions after inhaling the illuminating gas. This seemed to annoy him and induce him to seek insurance in companies and mutual benefit associations that were not so particular about their risks, and he ultimately secured $66,000 of insurance, divided among various companies, associations and fraternal societies.

Several times he noticed that he was followed by one or more ill-looking men, as he made his rounds of observation of the burning of the gas at night, as he walked through the back streets, and he mentioned the fact to the officers of the gas company. They cautioned him about exposing his money so freely when he had occasion to make change on the street, and advised him to carry a pistol. He replied that he was not afraid, that he never carried a pistol, and he disliked to do so. At the inquest there was no evidence to show that he ever carried one, except the testimony of a hardware merchant, who stated that he had sold him a revolver last April, similar in pattern to the one found by his body; but on subsequent examination by the judge, he and his clerk made such conflicting statements that the court was led to believe that the merchant did not sell him the revolver found by the body, although he may have sold him a different one. His family knew that he owned two revolvers, and they were both found in his house in their usual places after his death.

I speak quite confidently of Mr. Dunbar's character and habits, because I had known him rather intimately for fifteen years. Our offices were on the same floor of the same building and adjoining, so that, in addition to my knowledge of him as his family physician, I saw him nearly every day as he was about his business. At the time of his death he had an annual income of between three and four thousand dollars, which was more than enough to comfortably support himself and family. His assets, as near as could be ascertained at the inquest, were $18,170, while his indebtedness was $22,200, making a difference of about $4,000, which he owed for borrowed money. This amount with his good health and regular income could

hardly have caused him especial anxiety, or have been the cause of despondency.

The day preceding the evening of his death was spent apparently as usual, and he went to his home about six o'clock, P.M., and reclined upon the sofa during the evening, the time being occupied in reading and in conversing with his family. Between half past nine and ten o'clock he left the house, saying that he was going to investigate a reported leak in the gas-pipe under the Elm street bridge, near where his body was found shortly after ten o'clock. In fact, he was seen by several people walking in a direction which he would naturally take in the night to go to this bridge; but whether he had been there and was returning by the gas-house when he met his death, or was on his way to the bridge when it occurred, is unknown.

The inquest was held by Judge Tucker, beginning a few days after the death of Dunbar, and continued for several weeks. Every person was examined, who, it was supposed, could throw any light upon the cause of death, whether theoretical or practical.

Among the medical examiners called to testify, was Dr. D. B. N. Fish, of Amherst, whose investigations regarding powder-marks upon the skin, in the event of bullet-wounds from pistols held near the body, rendered his experience and experiments of value, in determining the question of possibility of a person shooting himself as Dunbar was shot, with the revolver found by the body, without exhibiting powder marks on the hair and scalp about the wound. The inquest was conducted with care and perseverance, but nothing in the testimony positively indicated the precise method of the shooting. Several detectives were employed, who very soon came to the conclusion that it was a case of suicide. One of them discovered a mark or crease across the sole of the right shoe which Dunbar had on when found, that might have been made by the twine that was attached to the handle of the revolver, indicating that the twine had been drawn tightly across the sole of the shoe with the left hand, while the right hand held the weapon in position for firing. Dr. Fish testified that, without using the twine, the revolver could possibly be fixed, and fired twenty-six inches from the head so as to make a wound like the wound in Dunbar's head, without producing any powder burn or mark upon hair of scalp.

Three days after Dunbar's death, his wallet and pocket-book were found just across the unoccupied field, on an ash-heap, back of a store-house, about thirty-six rods from where the body was found. They contained no money; one of them was open and the other closed, with its strap tucked into the loop.

The testimony of the medical witnesses differed in regard to the cause of the extensive ecchymosis of the lids of the left eye and the effusion of blood about the ball. All but two thought it could only be accounted for by a severe blow upon the eye. Two, however, considered it possible to have resulted from the blow or shock of the bullet upon the back of the head, although there was no fracture of the base of the skull or any injury whatever to the bones entering into the formation of the orbital cavity.

The judge's report of the inquest was very elaborate and complete, consisting of over twenty-six pages of legal cap. In conclusion, he says: "It seems clear that the death was either a murder, with an attempt to make it appear to be a suicide; or a suicide, with an attempt to make it appear to be a murder. A careful consideration of all the facts compels me to the conclusion that Mr. Dunbar committed suicide. This theory explains all the facts but one; this exception is the injury to the left eye. The evidence leaves it doubtful whether this injury was inflicted by a blow or was the result of the shock of the bullet-wound. If the later theory is true, then it is not inconsistent with suicide: if the former, then suicide seems impossible.

"I find and certify that George S. Dunbar of Pittsfield, Massachusetts, shortly after ten o'clock on the evening of July 4th, 1885, on Water street in said Pittsfield, came to his death by a bullet fired from a pistol, which bullet entered the back of his head, and that said pistol was discharged by his own hand.

(Signed), JOSEPH TUCKER.
Justice of the Central District Court."

The absence, at the inquest, of more positive evidence of murder, renders, of course, the finding of suicide justifiable. Yet there are circumstances connected with the case that seem to point quite positively to the conclusion that he did not shoot himself:—

(1) The black eye is incompatible with the theory of suicide.

(2) The situation and direction of the wound indicate that the revolver must have been held in a position almost, if not quite, impossible for the hand of the person shot, without causing powder marks or burns upon the hair or scalp.

(3) The fact that the pocket-books were found empty in a locality where they would naturally have been examined and left by a thief who had committed a murder and escaped through the field adjoining, a place where sufficient light could be obtained to examine the booty without being seen. If Dunbar had himself left them where they were found, he would, to escape observation, have travelled a long circuitous route from the place where he was last seen.

Besides these, there are other circumstances that might be mentioned, which militate against the probability of suicide. If he committed suicide he evidently meant to have it appear to be a murder. Upon no other theory can the long string, the fact that he was shot in the back of the head, the placing of the pocket-books, and the locality selected for the deed, be accounted for. If such was his intention, then an alert, intelligent and ingenious man, in the full possession of his faculties, laboring under no especial excitement, carefully prepared and carried out his scheme in the most bungling and foolish manner. Why should he have attached a useless string, ninety feet long, to the revolver and left three cartridges in his pocket? On the other hand, if he was murdered, these evidences of suicide are just what would have occurred to his assassin, to throw off the suspicion of murder. Which of the two theories is the true one, time may fully reveal.

If he committed suicide it is improbable that any further evidence of the fact will ever be added to what is now known. If he was murdered, there is yet hope of the discovery of the assassin.

— The American Neurological Society will hold its annual meeting at Long Branch on July 21. The Otological at New London, on July 20. The Ophthalmological at New London, on the 21st.

CASES OF TRACHEOTOMY IN DIPHTHERITIC CROUP.

BY AUG. M. TUPPER, M.D., OF ROCKPORT, MASS.

Trousseau is credited with saying that "tracheotomy badly performed, but well treated afterwards, will end favorably in a third of the cases, whereas tracheotomy excellently executed but badly treated afterwards will almost invariably be followed by a fatal termination."

Meigs and Pepper say, "whenever it is in any way possible, the constant presence, day and night, of a physician or student of medicine should be secured for four or five days after the operation . . . the child should never be without the presence of some one competent and ready to render the prompt assistance which is frequently necessary to avert instant death."

J. Lewis Smith, in his "Diseases of Children," remarks that "no surgical operation more imperatively demands intelligent and attentive after-nursing than tracheotomy." Now, while I entirely agree with the above quotations, and can well understand the relief and comfort it must be to the physician to know that during his absence his patient is in the hands of a medical friend or skilled nurse, I believe that many times we can attain success under most unfavorable conditions, and when we have to depend entirely upon ourselves for the care, as well as the treatment, with what can be taught the parents and friends at the time. By making frequent visits, and spending the nights, if possible, in the same house with the patient, we shall often be able to succeed, without the trained assistance which is so desirable when it is possible to procure it.

The following cases, by the recovery of two out of the five, go towards proving this, I think, particularly the last one, and it is in the hope that they may prove interesting and encouraging, especially to those who, like myself, are living away from the medical centres, and where the professional nurse is not at hand, that I venture to report them. All were diphtheritic, as proved by the presence of false membrane in the fauces, and the prevalence of diphtheria in the vicinity, and are reported from notes written at the time, and partly from memory.

Case I. A boy, seven and a half years old, who recovered, has already been reported in the Journal, October 11th, 1877.

Case II. Female, aged six years and nine months. Went to bed September 21st, 1879, apparently well. The next morning (September 22d) did not want to get up, and complained of headache and sore throat. When I first saw her, the tonsils were very much swollen, and large patches of diphtheritic membrane could be seen upon them. There was a copious discharge from the nostrils, and the breathing was labored.

September 23d. This morning she is much worse, the swelling in the throat has increased, the tonsils nearly meeting, and her breathing is much obstructed. The nasal discharge has also increased. In short, she presented the appearance of one of those severe cases of diphtheria with which we are all familiar, with the addition of the croupy symptoms.

3 P. M. Growing worse rapidly, and the respiration being still more embarrassed, I decided that tracheotomy offered the only chance, and that a very slight one, on account of the great amount of systemic infection. However, the operation was done at 4 P. M. The trachea was small and deeply situated. At first we thought the tube was too large, and tried wire bent in the shape of hooks, but could not make it answer very well, and finally got our only canula in place. She was much relieved, and at 10.30 P. M. was sleeping pretty comfortably, but her pulse was very small and too rapid to be counted. The nose continued to discharge freely. We gave her injections of brandy, milk, and eggs as frequently as the rectum appeared likely to retain them. Did not try to make her swallow, the throat being so much swollen as to make it very difficult for her to take nourishment by the mouth. The operation was of great relief to this patient, and she continued comfortable until 2 A. M. of the 24th, when she died very quietly and easily.

I have sometimes felt that this child had better not have been operated upon, but when we read what such a man as Jacobi says about these cases,[1] namely: "no alleged contraindication to tracheotomy, whether the tender age of the patient, or a complication with either an inflammatory or an infectious disease, must be considered valid. The one strict indication for the performance of tracheotomy is when the diagnosis of pseudo-membranous laryngitis is undoubted. The increasing dyspnœa, cyanosis, and approaching asphyxia, with the certainty that a well-directed and efficient medicinal treatment has been, and in all probability, will be useless; even under these circumstances, there is no mathematical certainty. The matured experience of a well-informed and thoughtful physician will commit but few errors. If there be the slightest doubt, the operation ought to be preferred to suffocation." When we read such conclusions, we must feel that we have done for the best, given our patient every possible chance, and, at least, a merciful death.

Case III. Boy, aged six years and two months. Taken with diphtheria November 26th, 1879. Was hoarse from the first, but had no difficulty in breathing until Wednesday, December 3d, when he began to breathe harshly, and to cough occasionally.

Thursday, 4th. The difficulty in respiration had increased, and he had several attacks of spasm of the glottis.

Friday, 5th. He seemed better in the morning, and continued so until 4 P. M., when he grew worse, and began to suffer from dyspnœa continuously. The difficulty in breathing increased very much until 10 P. M., when tracheotomy was performed. There were several large veins in the line of incision, and the hæmorrhage was considerable, and when the trachea was opened, blood escaped into the windpipe and nearly suffocated him, but by vigorous effort, and performing artificial respiration through a catheter, he was resuscitated. He soon fell asleep, and passed a very comfortable night.

December 6th, 2.30 P. M. Has coughed a good deal to-day, but not raised much, still he seems in pretty fair condition. His pulse has been below 100 up to last night, when it reached 130 to 140; since he recovered from the operation it has been about 120. Respiration not counted, but certainly as high as 60; it is now 48, and he is sleeping quietly. I have not been able to keep the inner canula in place; he coughs very much, and does not breathe as well as when he has the outer tube only. Not much false membrane has been seen, and before the operation it had de-

[1] Pepper's "System of Medicine," Vol. III.

creased; only a patch half as large as the thumb-nail remained on the back of the right side of the throat.

December 7th, 9 A. M. Was pretty sick yesterday afternoon and last night; breathing a good deal obstructed, partly from mucus and partly from false membrane, at least I think so, from the sound of the cough and character of the breathing. There is a peculiar clicking sound at the end of inspiration, as if a piece of membrane partly detached was acting as a valve. I have heard this sound since, and regard it as an ominous sign, as significant of an extension of the disease below the opening. I am obliged to use the outer canula only most of the time, as he does not breathe as well with the inner tube in place. Took the tube out completely last night, at seven o'clock, and again this morning, at half-past six; neither time did it relieve him much, showing the obstruction to be in the trachea, and not in the canula. Pulse and respiration remain about the same, 120 to 130, and 45 to 50, respectively. Just now I removed the tube again, and think he seems easier for it. Intend leaving it out for a while, as there seems to be phlegm and membrane not completely detached, and I fear it may be too large to get out through the canula.

December 8th. The distress in breathing continued to grow worse, the pulse rising in frequency and exhaustion coming on. He finally died of asphyxia at nine last night, after suffering very much for six hours previous.

He never coughed up any false membrane and very little mucous, although at times it seemed very loose. This case was at first a very promising one, more like a case of ordinary croup, as very little membrane was seen upon the fauces and the constitutional symptoms were very slight. I could not even get him put to bed until he began to have distress in his breathing. His hoarseness made me feel uneasy of course, and I watched him very closely all the while. It illustrates how difficult it is to tell how far the diphtheritic membrane may go before it has reached its limit, and also how late in the case we may have the larynx and trachea attacked, even after the membrane has begun to disappear from the throat.

CASE IV. Boy aged nine years and two months. Taken with diphtheria December 31st, 1880. First seen January 1st, 1881. Has had a cold for two or three days. Tonsils swollen and patched with false membrane.

January 2d. Mother says he had a croupy attack last night and that his cough is croupy.

January 3d. Croupy symptoms have increased and his breathing has become so much obstructed that tracheotomy was performed at ten this morning. The operation was a very easy one, he was much relieved, and now, 10 P.M., the breathing is very easy and noiseless and he is sleeping like an infant.

January 4th. Rested well last night, but coughed a good deal, and I have had to take the inner tube out, consequently have a good deal of trouble in keeping the canula clear. At noon he had a severe attack of dyspnœa and his mother cut the tapes and removed the tube, the removal being followed by violent cough and expulsion of a large piece of false membrane, a cast of the trachea, an inch long. On my arrival, some two hours after, I reintroduced the tube, and although at first he breathed hard and coughed a good deal, he is now, 3.30, P.M., quite easy.

January 5th. Had a very comfortable night last night, but this morning the tube had to be left out.

P.M. Breathing becoming more and more obstructed, the disease has evidently gone below the opening. He suffers a good deal and requires constant use of the atomizer. Has frequent paroxysms of dyspnœa, and died in one at 6 P.M. The pulse did not go over 130, and he took his food and medicine well up to the last moment.

I might mention that so afraid was every one of the disease about that time that I had a difficulty in getting anybody to come in and assist Dr. Manning and myself during the operation, and the young man I finally procured was not allowed to enter his sister's house, where he boarded, for several days, for fear he should bring the disease to some of the family.

CASE V. Female, aged two years and eight months. First called November 22d, 1885. Her mother says she has had a cold for two or three days and been hoarse. I found her breathing harshly, with a croupy cough and all the symptoms of commencing laryngeal obstruction. Did not look in her throat, it being after lamplight I knew I could not see satisfactorily. Commenced the bichloride treatment, ordered steam to be generated in the room, and gave an emetic.

November 23d. Visited her early and found the symptom of obstruction very much increased. Examination of the fauces showed both tonsils coated with false membrane. Advised tracheotomy and performed it as soon as I could get help and instruments. Before the completion of the operation, on account of the failure of the pulse, although the respiration continued good, the trachea had to be opened before it was fairly exposed. Brandy was administered hypodermically and she soon rallied.

This case did as well as one could wish, there never was any trouble from obstruction and the breathing was easy and most of the time noiseless, with the exception of one night, but by using the atomizer faithfully and exciting cough by passing a feather down the tube, relief was obtained and there was no further difficulty on that account. All attempts at removing the tube permanently failed up to December 27th, almost five weeks, when she was able to breathe through the larynx comfortably for a short time. Until then she could do very well about long enough to remove and clean the canula and sew on new tapes, when she would begin to be distressed and the tube would have to be replaced, and quickly, too, sometimes. After December 27th, we would remove the inner tube and cork up the outer, which had a slot in it, for several hours each day. Still the canula could not be removed permanently. She could breathe through the larynx with the tube in place and corked, but if it were taken out she would have what seemed to us spasm of the glottis. She coughed a good deal, and often the expectoration would be bloody, occasionally pure blood. The bloody expectoration continued until I changed the tube for a smaller one.

On January 5th, 1886, I took out the canula, and staying some little time found she was breathing well, and as each time it was removed the mother was instructed how to replace it and made to do it herself, so she could respond to an emergency, I left, directing her to reintroduce it at 4 P.M., and before that if she began to be distressed. At the appointed time the mother attempted to replace the tube, and failing sent for me. On my arrival, two hours later, I found the

granulations which existed around the outer edge of the wound had closed in and filled up the opening. I tried to get the canula in and failed likewise, but finding the child breathing well, without any distress, did not persevere in my attempts, but decided to leave matters as they were. Suffice it to say the child slept well all night and never had any trouble afterwards, and in about two weeks the opening was entirely closed.

It is this case I would speak particularly of, for there are several unusual and interesting features about it, one of which is the size of the tube. It is advisable to use as large a tube as can be introduced easily into the trachea. For the first few weeks I used one which was slightly larger than that used in my first case. It was inserted very easily, but I think was rather large and probably accounted for the bloody expectoration. It was afterwards changed for the same one worn in Case I, and it will be remembered that he was seven and a half years old, while this patient was only two years and eight months. Dr. R. W. Parker, in the *Lancet*, February 7th, 1885, says: "slight differences in the length of the tube, in depth from the front opening to the angles and in calibre, I believe, often turns the balance one way or the other. A tracheotomy tube, like a boot, must fit comfortably, or it cannot be worn without injury." Yet here are two children, with almost five years differences in their ages, wearing the very same tube and both recovering.

Another feature is the rapid filling up by the granulations of the external orifice of the wound, thereby preventing the reintroduction of the tube when left out a few hours, which might have proved a very serious matter and illustrates the importance of keeping these granulations down by the use of caustics or scissors. The most interesting and unusual complication is the prolonged retention of the canula, forty-four days. In any case it is advisable to remove the tube at the earliest moment which is practicable, as the prolonged retention may be a source of danger in several forms, such as ulceration, hæmorrhage, and a formation of granulations in the trachea.

Meigs and Pepper, after quoting Trousseau as saying the removal may be delayed fifteen to twenty-four or forty-four days or even longer, give the causes as summed up by Mr. Mash, as:

"1st. Obstruction of the larynx by false membranes which have been known to linger in its cavity for at least fourteen days after this operation.

"2d. A chronic inflammation and thickening of the mucous membranes of the larynx which may remain after the acute disease has passed off.

"3d. A narrowing or complete obliteration of the passage of the larynx by a growth of granulations above and around the canula.

"4th. An impairment or complete loss of those functions of the muscles of the larynx which regulate the admission of air through the rima glottidis.

"5th. Adhesion of the opposed surfaces of the vocal cords."

Another cause which may delay the removal is nervousness. The child accustomed to breathe through the tube, on finding it removed and air passing through the natural channel, becomes alarmed and spasm of the glottis ensues, and this of course increases the terror, each reacting upon the other. Parker relates a case in which the removal was delayed in part on that account. To which of these causes the difficulty was due in the present case, it is hard to determine positively, but I am inclined to attribute it to two, namely, the presence of granulations in the trachea and also to spasm, the latter being induced part of the time by the existence of the granulations. The fact of there being granulations at the external orifice would go to prove the probability of their presence also at the inner. The pressure of the tube keeps them back, but a short time after its removal they swell up and if they are sufficient in quantity may occlude the trachea, at least that is the explanation Parker gives. The bloody expectoration while wearing the larger tubes was also indicative of irritation and ulceration perhaps. It is rather provoking to read in the text-books of the causes of the delay in the removal of the canula, but to find nothing on the treatment of such complications. Parker recommends the local application of nitrate of silver fused on a silver probe, suitably bent, and applied to those parts on which the granulations are supposed to exist, or a solution of the nitrate, thirty grains to the ounce, a few drops allowed to trickle into the trachea, one of which methods I should certainly adopt in another case. His articles in the *Lancet*, January 24th, 31st, and February 7th, 1885, are valuable ones and well worth reading. Thus far I have said nothing about the treatment of these cases, but medicinally it consisted of a continuation of a Tr. Chloride of Iron and Chlorate of Potash mixture given frequently, and small doses of a solution of carbolic acid also administered frequently, when they took anything, for in some of them it was impossible to give any medicine except a little carbonate of ammonia; of course they were fed as nutritiously as possible. Trousseau states that as soon as the trachea is opened the diphtheritic process comes to a standstill in the pharynx. The great point is to keep the canula clear, and in order to accomplish this the inner tube must be frequently removed and cleaned. My plan has been whenever the breathing became noisy or obstructed, to use the steam atomizer, placing the mouthpiece close to the opening, protecting the patient from being wet by the spray by means of towels, etc., when, if not improved by the inhalation, remove the inner tube and clean it, and if neither of these measures succeed in rendering the respiration easy, steam through the outer canula and pass a feather down into the trachea so as to excite cough and expel the phlegm or membrane which is very likely the cause of the difficulty. The steam atomizer is invaluable in these cases, in my opinion, but I think that steam from water alone or a weak solution of carbolic acid is as useful as any of the so-called solvents. I have seen the little patients motion and point for the atomizer, because it relieved them, and one poor little fellow in his agony would grasp the mouthpiece and hold it to the opening himself, thereby giving mute but eloquent testimony of its utility.

It has been noticed that in some of these cases we were obliged to leave out the inner tube, because the breathing was easier with the single outer canula only. Why this was I do not know, unless the instrument was too small. Profiting by experience, I should hereafter use larger tubes at the same age. Possibly the result might have been more favorable had I been better provided. The rooms were kept warm (75° to 80°), and the atmosphere charged with steam, but in the last case the amount was small, owing to circumstances.

To strengthen my assertion that tracheotomy can be successful in diphtheria under most unfavorable conditions, I would like to relate some of the circumstances of the last case. The father was a teamster and the home none too comfortable, while the hygienic arrangements left much to be desired. As soon as the disease was declared diphtheria all the neighbors at once departed, leaving the mother and the doctor to do all the nursing and take care of the family besides, for the father having had a brother return from the West after a long absence, celebrated his return and the "miracle" which was being done on his child, in the too common manner, with the usual result, and was of no help for the first two or three days. The first night about 2 o'clock I came down stairs to see how matters were progressing, to find the mother and the patient sound asleep on the bed, and this brother referred to, who had promised to keep awake and watch, lying on the floor also asleep. The mother on the fourth day was attacked by the disease, but the attack proving light, was able to keep on her feet and attend to the child.

In regard to the operation itself, it is not generally a difficult one, but it is very encouraging to those of us who are not in the way of seeing or doing much surgery to find an author like Trousseau saying "provided the canula be introduced into the trachea it really matters little how that has been accomplished, whether the operation has been performed with more or less dexterity, or with more or less rapidity, the result is the same provided there has not been hæmorrhage," and again, Parker, who writes "It is hardly probable that the various structures found in front of the trachea will be individually recognized during the performance of a tracheotomy."

If one will look through the medical journals for the last ten years he will see how much more frequently the operation is done than in the past, and how many more successful results been obtained. I well remember how an old, experienced and able physician discouraged the attempt in my first case, because it was diphtheritic, but I venture to predict that the time is coming, if not here already, when the physician will be just as much expected to open the trachea of a child dying from croup, diphtheritic or not, as he is expected to set a fractured limb or tie a wounded artery.

Since writing the foregoing paper, I have been called to a neighboring village in consultation, to see a child with croup, on whom I operated. The nursing was done entirely by the relatives, the case doing perfectly well and the canula removed permanently on the twelfth day. The operation was done in the kitchen, the patient remaining there until well, it being the only room where it was possible to get the necessary amount of steam generated.

THE DELAYED REMOVAL OF TRACHEOTOMY TUBES, WITH CASES.

BY ROBERT W. LOVETT, M.D.
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AFTER the performance of tracheotomy in children there is seldom any difficulty in dispensing with the use of the trachea tube after a few days. At the Boston City Hospital in about three hundred tracheotomies there have only been four cases which presented this difficulty. Ordinarily at the Hospital the tube is removed on the fifth, sixth, or seventh day by cutting the tape and quietly taking it out. No preliminary testing of the passage of air through the larynx by stopping the tube is attempted, and in the overwhelming majority of cases laryngeal breathing is fully established by the time that the tracheal opening is cicatrized. The following four cases are the only ones in which tubes were worn for any considerable time.

I. J. E. C., a fat little boy fifteen months old, a nursing baby, was admitted with his mother May 29, 1885. He had been distressed for breath for two days and at the time of admission he was suffering from very severe dyspnœa with retraction of the soft parts of the chest at each inspiration. There was grayish membrane upon both tonsils, and the glands of the neck were much enlarged. Tracheotomy was at once done by the House Surgeon, and afforded relief. His progress was very favorable, he nursed quite well, drank a few ounces of milk daily, and was but little prostrated. On the sixth day (June 4) the tube was taken out at 11 A.M. and the child breathed quietly without it. At 3 P.M., of the same day, he had such a violent attack of dyspnœa that he would have died had not the nurse at once replaced his tube. He rallied quickly from the extreme prostration caused by this attack and breathed without further trouble until three days later (June 7) when the tube was removed again, but dyspnœa came on at once and it had to be replaced. For two weeks from this time his condition continued the same. His tube was taken out daily, but he was unable to breathe without it and it was always necessary to put it back at once. The wound had closed around the tube and no exuberant granulations were to be seen. It seemed as if the trachea collapsed when the tube was taken out, and so shut off the entrance of air to the lungs. Air certainly passed through the larynx when the tube was stopped, and he began to talk aloud June 22d, in a husky but fairly loud voice. The wound was painted daily with a saturated solution of alum and a smaller but still fenestrated tube was put in. He went out of doors daily and improved in his general condition until July 20, when he was discharged wearing his tube. He reported at the Out-Patient Department from time to time to Dr. Hooper and was under his care until November 15, 1885, when he was readmitted to the hospital for another attempt to remove the tube. It came out with difficulty and a small mass of granulation tissue which had grown through the fenestrum into the tube, was pulled away with it. The boy struggled and strangled a little, but in five minutes he was breathing quietly and the tube was left out, although it had been intended to insert a smaller and a non-fenestrated tube. He had a very croupy cough for two nights and breathed rather noisily when asleep, but without distress. November 21, 1886, he left the Hospital; the wound was closed, his voice clear and natural, and his breathing perfectly normal. He has continued in this condition.

II. Albert W., four years old, was admitted July 5, 1885, suffering from severe dyspnœa. He had had whooping-cough three months previously, and was now suffering from measles, the eruption of which was just disappearing. He had been distressed for breath for three days, and at the time of admission he was struggling with every inspiration and somewhat cya-

notic. Tracheotomy was at once done without ether by Dr. Bolles and complete relief was afforded. He received the usual treatment, one-sixtieth of a grain of corrosive sublimate every hour, and milk and brandy. He got along very well and on the fifth day (July 10), the tube was taken out. Two days afterward he had a violent attack of dyspnœa and the tube was replaced. For a week after this the tube was taken out for a little while each day and the wound painted with copper sulphate and glycerine, on the supposition that exuberant granulations were the cause of the trouble. July 22, the boy was able to get along without the tube and it was taken out and the wound treated with tannic acid solution. July 30, the boy was playing about the ward all day, the wound had wholly closed, his voice was clear and his general condition excellent. That night he had a croupy cough and noisy respiration. This continued through the night and at 6 A.M., July 31, he had an attack of violent dyspnœa with much retraction of the abdomen and soft parts of the chest with each inspiration. The mother refused to have tracheotomy done again, but at 8.30 A.M., he was failing so rapidly that she asked for the operation and tracheotomy was at once done without ether by the House Surgeon. The operation was in the line of the old scar and by no means an easy one. Immediate relief followed the opening of the trachea, the boy rallied quickly under strong stimulation and was soon convalescent.

On the sixth day (August 5), the tube was taken out and left out until the next day when it had to be put back and left in until August 19, when it was left out for thirty-six hours, but an attack of dyspnœa coming on in the night made it necessary to put it back with all possible haste. August 25, a smaller and non-fenestrated tube was substituted for it and September 1, 1885, the boy was discharged wearing that tube. His voice was clear and his condition excellent.

October 3, 1885, he was readmitted, having had his tube plugged for a week, both day and night, and the tube was at once removed. Beyond a croupy cough for a day or two he had no trouble and was discharged October 14. The wound was closed, his voice still clear, and his condition is still good. In neither Case I or Case II was it possible to get a view of the larynx although repeated attempts were made.

III. Mattie S., three years old, was admitted May 1, 1881. Dyspnœa was severe and tracheotomy was done at once without ether, by Dr. Ingalls, and the progress of the case was very favorable. On the seventh day (May 8), the tube was taken out, but an attack of dyspnœa came on in forty minutes and it had to be put back. It was left in for a week and a second trial made May 15; result the same. In another week air was found to pass through the larynx, but the tube could not be dispensed with. June 3, ether was given and the trachea was stitched to the skin around the edges of the wound, but the tube had to be replaced nevertheless. Some improvement followed this, and by the middle of June the tube was kept out most of the time, and only put back temporarily when it was needed, but in a few days her general health failed, and by the 30th she was wearing the tube again. July 5, 1881, she was discharged still wearing it.

From time to time attempts were made to remove it, but all proved unsuccessful. On the evening of July 19, 1883, two years after discharge, the tube had been taken out and cleaned, and her mother was about to replace it, when the little girl said "I do not want it any more, you need not put it in." She has never had any further trouble.

IV. Clara Z., two years old, had tracheotomy performed at the Hospital for diphtheritic laryngitis, June 16, 1883, by Dr. Ingalls. On the following day she had extensive emphysema of the chest, but this soon disappeared and she got along very nicely. On June 26, the tenth day, the tube was taken out, but had to be replaced in an hour as the child was unable to breathe without it. By July 4, she could breathe through the larynx when the tube was stopped but she had a cough and could not breathe when the tube was taken out. She had a variable progress, and by the early part of August she could not get along without it, even for a minute. At this time she was going out daily and was in good condition. August 13 the inner tube would not go in because of granulations sticking through the fenestrum of the outer one, and August 16, 1883, she was sent to the Children's Hospital to be under the care of Dr. Langmaid. A non-fenestrated tube was substituted for the one that she was wearing, and the size of that was gradually diminished by putting in a smaller and a shorter one every few days. In three weeks she was discharged well, with the wound closed.

The cause of the difficulty in this class of cases is not always clear, but certain pathological conditions have been proved to exist in some of the cases. The commonest of these causes seems to be the obstruction of the air passage by exuberant granulation masses growing from the trachea walls. The irritation caused by the sharp edge of the fenestrum in the trachea tube is probably the cause of much of the trouble, and twenty years ago, Trousseau called attention to the fact that the fenestrum was a useless and a mischievous thing. No tube of ordinary size completely fills the trachea, and air enough passes around it to allow the child to breathe through the larynx when the tube is stopped, if such a process is thought necessary before the final removal of the tube. Again, there is a tendency in certain cases to the formation of exuberant granulations inside the trachea upon the cicatrix during or after the closure of the wound. These granulations may be of the ordinary type, in masses, or worse, moved to and fro by the current of air passing up and down the trachea; they may become pedunculated, and form one or more laryngeal polypi of the size of a pea attached to the wall of the trachea by a pedicle of variable length. Both these conditions have been several times proved by autopsy, by laryngoscopic examination during life, and on opening the trachea to relieve the dyspnœa caused by them, they have been seen and removed.[1] These polypi are a mere consolidation of granulation tissue structure, although they resemble it but little in gross appearance.[2] Prolonged wearing of the trachea tube is a frequent, but not a necessary cause of this complication.

The class of cases next most common is where the trouble is caused by a spasm of the glottis, the reason for which is very obscure. It is suggested that the cold air, going through the larynx for some time unused to its passage, excites a reflex spasm. Again, that the muscles have been in disuse so long that, unless the constant attention of the patient is directed to the breathing, dyspnœa ensues. This accounts for

[1] Koch Archiv fur Klin Chir, 1876-77, xx, 544. Meyerson Wiener Med. Presse, 1884, p. 880.
[2] Ross. Edin. Med. Journal, xxviii, 788.

the fact that children have been able to do without their tubes except during sleep. At any rate, for some reason or other, there is a profound disturbance of the innervation of the larynx in which the mental element is very strong. Death has repeatedly occurred in these spasms. Blachez [3] tells of a case where a boy had been without his tube only a very short time, after wearing it for over a month. He pinched his finger in the door, became angry, and died at once of suffocation. There was nothing found at the autopsy to account for his death. Kriushaber,[4] however, lost a case with the same symptoms, who proved to have had a polypus form on the cicatrix. The child had worn a tube for two months, the wound had closed, and his voice was clear. His father and two other physicians were discussing his case in the room and wished to see the scar. His mother started to undress him, he struggled, a paroxysm of dyspnœa came on, and he died before help could be afforded. Children in this class of cases have been repeatedly deceived into going without a tube by all sorts of devices, such as wearing a tube without any lumen, a shield without any tube, and the like, and even in a case related by Millard,[5] a little girl whose trachea wound had closed, wore her tube around her neck hanging by a string, and every effort to take it from her, caused so serious a paroxysm of dyspnœa that her life was endangered, and it was only by the most persistent effort on the part of Millard that she was enabled to get along without it.

True post-diphtheritic paralysis of the cords is a third and still less common cause of the trouble. In most cases where there is obstruction a laryngoscopic examination has shown no paralysis, but Gerhardt [6] recorded a case observed during sleep where there was true paralysis after wearing a tube for three weeks. It is often very hard to distinguish this condition clinically from the nervous spasm mentioned above; the paralysis is of course more regular and not likely to be found more than three months after the occurrence of diphtheria.

Collapse of the trachea walls and cicatrical contraction of the trachea and larynx only remain to be mentioned as possible but infrequent causes of this trouble. The latter is not a condition that we should expect to find immediately after tracheotomy, but Steiner found a larynx completely blocked up by scar tissue nine months after operation, and Blachez found one seriously narrowed in three months; on the whole it is a much later complication than the others mentioned. Some cases are recorded where severe dyspnœa in adults was found to be due to a cicatricial band like a hymen stretched across the trachea at the seat of a tracheotomy done when a child. Mougeot, in a report to the French Academy of Medicine, advanced the belief that but few children who had had tracheotomy performed lived to adult life, alleging that they fell victims to obscure disorders the result of a tracheal constriction. In twenty years of inquiry he had never found a military surgeon who had seen a conscript with a tracheotomy scar, and he and all his friends could only recall six instances where tracheotomized children had reached adult life.

The diagnosis between the different conditions is far from easy. Trouble caused by a laryngeal polypus comes late, after the wound has been closed some days, as in Case II, above. The other conditions are apt to be present at the first removal of the tube. The trouble can be located as laryngeal or not by stopping the trachea tube; if air passes through the larynx the obstruction is tracheal, if not it is laryngeal. In Case I the trouble seems to have been due to collapse of the walls of the trachea when not held apart by the tube. The child was very young and the cartilages of the trachea very pliable, air passed through the larynx when the tube was stopped, and the collapse of the trachea walls could be seen when the tube was out and inspiration was attempted. Case II was a typical case of laryngeal polypus forming on the cicatrix in every respect. Case IV was undoubtedly due to the protrusion of granulations into the trachea, and Case III seems rather more like spasm than paralysis. The long duration, the clear voice, and the character of the recovery seems enough to exclude paralysis.

The prognosis in all these cases is at best rather doubtful. Ross [7] reported fourteen cases of polypi after tracheotomy (all that had been recorded up to 1883), and of these four had died before a second tracheotomy could be done, seven had a second tracheotomy (five of these recovered), and two had a third operation and were still wearing tubes. Of twenty-six cases of granulation obstruction collected by Koch [8] five died of suffocation, five wore a tube permanently, or at least many years, and seven got well. The remainder were uncertain. In forty cases from all the causes where a tube had been worn at least two months, collected from the journals and monographs, sixteen were fatal, nineteen cured, and five were still wearing tubes. The proportion of fatal cases is undoubtedly too large, as many cases were merely reported for the sake of the autopsies. The cure was often delayed for years, and the ages of the children in nearly all the cases was from two to four years, one was five and one nine years old. As to the frequency of its occurrence it would be hard to speak; it is evidently a rare complication, and I doubt if there are seventy-five cases on record. Its ætiology is altogether obscure and it is impossible to say in advance which case will offer difficulty in this respect.

The treatment has been as varied as it has been inefficient; here and there some therapeutic proceeding has been followed by a cure, but there will be two other cases where the same thing has failed. The German way is to open the trachea and remove any obstacle that may be found and cauterize the granulations. Other methods have consisted in the passage of bougies and drainage tubes and laminaria tents through the larynx to overcome its spasm and to dilate it. The most rational and by all means the most successful mode of treatment has been the abolition of a fenestrum in the tube and the substitution of smaller and smaller tubes, combined with patient waiting. A large number of the recorded recoveries have been spontaneous, often after the trial of ever so many different treatments and the abandonment of them all. Cauterizing and astringent applications to the granulations has been rarely productive of a cure. Where the trouble is of a mental character of course the indications must be met by suitable treatment.

The complication is altogether a trying and a treacherous one, and the obscurity of the whole subject adds much to its difficulty.

[3] Gazette des Hop., 1874, No. 35.
[4] Gazette des Hopitaux, 1874; Nos. 84 and 85.
[5] Millard. De la Tracle dans le Cas de croup, Paris, 1858.
[6] Gerhardt Kinderkrankheiten, iii, 2, 326.
[7] Edin. Med. Journal, xxviii, 2, 1883.
[8] Archiv. für Klin. Chir. Bd., xx, 840.

REPORT OF PROGRESS IN GYNÆCOLOGY.

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CURABILITY OF CANCER OF THE CERVIX UTERI BY OPERATIVE TREATMENT.

A RECENT debate on this subject in the Obstetrical and Gynæcological Society of Berlin, influenced Dr. M. Hofmeier,[1] by new and careful inquiries, to complete the table which he published some two years ago, in order to get at as complete as possible an idea of the ultimate results. His statistics differ from most others in that he gives the percentage of recoveries in the number of operations done up to a given time, excepting both those who died immediately after the operation, and those of whom nothing could be found out. That gave, of one hundred and forty-five operations, one hundred and seventeen which could be made use of, as twenty died from the effects of the operation, and eight could not be found. The following table shows the results:

1 Year.	Part Ext. 88.	Recurrence, 43.	Cured, 45 = 51	%
	Total Ext. 29.	" 15.	" 14 = 48	"
	Whole Number, 117.	" 58.	" 59 = 50	"
2 Years.	Part Ext. 68.	" 37.	" 31 = 46	%
	Total Ext. 25.	" 19.	" 6 = 24	"
	Whole Number, 93.	" 56.	" 37 = 40.2	"
3 Years.	Part Ext. 49.	" 26.	" 23 = 47	%
	Total Ext. 14.	" 12.	" 2 = 14.5	"
	Whole Number, 63.	" 38.	" 25 = 40	"
4 Years.	Part Ext. 29.	" 18.	" 11 = 38	%
5 Years.	Part Ext. 17.	" 11.	" 6 = 32	%

The percentage of cures, according to this table, falls from fifty per cent. after the first year to forty per cent. after the third year, which is to be attributed to the total extirpations, the percentage of cures after this operation falling from forty-eight per cent. to fourteen.

The lower percentages in the fourth and fifth years are not to be attributed to late recurrences of the trouble, but to the fact that at that time the indications for the operation were much less accurate. Hofmeier thinks the poorer results after total extirpation are due to the fact that the form of disease for which this operation is indicated comes later under observation.

Comparing these figures, however, with the results in carcinoma in other localities, they make a very favorable showing. The best results in Billroth's clinic were the cases of cancer of the face, with forty per cent. cures. Inasmuch as the percentage of cures following the supra-vaginal amputation remains about the same for those operated on one, two, or three years previously, compared with the whole number of operations, namely, forty-five per cent., one can conclude that certainly half of the cases which seem suitable for the operation can be cured.

Local return of the disease more than a year after operation is very rare with what he calls cancroid of the vaginal portion, and even then, is always in the cellular tissue. Five cases of late recurrence (four to five years) came under observation, two with completely healthy uterus, as confirmed by autopsy, and in the other three, as far as could be clinically determined, the uterus was free from disease.

In only four of forty-five cases was there local return of the disease after a year had elapsed, and in these cases the condition was suspicious, even before a year had passed. Hofmeier therefore concludes that if a year after operation there is an entirely normal condition, probability of local recurrence is only slight. In only two cases was the return of the disease so limited to the uterus that total extirpation was advisable. One died, and but four months had elapsed since the second had been operated on.

[1] Centralblatt für Gynäkologie, No. 6, 1886.

A SIMPLE METHOD OF TREATMENT OF CHRONIC UTERINE CATARRH.

Dr. Kugelmann[2] having found, by personal experience, and that of others, that finely-powdered iodoform snuffed up into the nasal cavity would cut short a nasal catarrh, was led to try similar treatment in cases of chronic endometritis. He uses a slight modification of a male catheter, with the blunt end filled out. Having placed a certain quantity of iodoform in the catheter, it is given the appropriate curve, well oiled, and introduced into the uterine cavity. The external end is then connected with a bulb syringe, and the powder blown into the uterine canal. The catheter is then thoroughly disinfected and dried. If several patients are to be treated the same day, a fresh catheter is needed for each one.

The author has treated numerous patients in this way without any unpleasant consequences. He recommends two applications a week, and has often seen marked improvement after a few treatments. He says, in speaking of its use in the nose, that Calabar Bean deodorizes the iodoform.

CURETTING THE UTERUS FOR THE REMOVAL OF PRODUCTS OF CONCEPTION.

Dr. Felsenreich,[3] in this article, begins by referring to the greater ease and safety with which abortions are treated now, owing to the use of the aseptic tampon. This results more often than formerly in the complete emptying of the uterus. In the great number of abortions, however, there still remain many where the retention of products of conception gives rise to dangerous hæmorrhages, and other unpleasant consequences. The author therefore gives some rules for simple operative procedures, such as can be carried out without assistance, and by the general practitioner. He operated alone in nine out of twenty such cases.

The symptoms which call for operative interference are hæmorrhage, decomposition of the contents of the uterus, and later, local inflammation or general constitutional infection. The question naturally arises, how long to wait if none of these symptoms appear. In exceptional cases, portions of the placenta may be retained and nourished for weeks, and even months, and the author gives details of a case where a portion of the placenta was expelled three months after an abortion without any signs of decomposition. He is of the opinion, however, that it is unwise to wait longer than two days, since after that time the retained products rarely come away spontaneously, and every hour of delay adds to the probability of hæmorrhage or infection. Should the physician not be within convenient distance of his patient, it is well to remove the placenta after a delay of a few hours only.

Of the methods to be employed, the first to be considered is the digital, for with the softened cervix it is the easiest, and gives us the greatest security that all has been removed. To this end, it is necessary that the

[2] Allgeimene Wiener Med. Zeitung, No. 42, 1885.
[3] Allgeimene Wiener Med. Zeitung, No. 44, 1885.

exploring finger should reach the fundus of the uterus, and it is important to see that the bladder is empty. Antiseptic intra-uterine injections before and after, and an iodoform tampon are the best preventatives of infection.

When the cervix is too narrow to admit the finger easily, it can often be accomplished by drawing down the uterus with the vulsellum. Schroeder has recommended for such cases the division of the cervix on both sides up to the vaginal insertion, with its subsequent closure by sutures. This is an operative procedure which hardly seems necessary. Slow dilatation by means of tents he considered dangerous, from the additional liability it affords to septic infection.

LACERATION OF THE CERVIX AND TRACHELORRAPHY.

This subject has, in England, only very slowly received the recognition which it deserves. It is therefore all the more gratifying to find its necessity so thoroughly appreciated, and its indications so clearly stated as they are by Dr. Grailly Hewitt in a lecture published in the *British Medical Journal* for January 2d, 1886. He first gives brief histories of eleven cases in which he performed the operation, and then gives his views as to symptomatology. The conclusions at which he has personally arrived are expressed in the following summary: "The operation is indicated by the presence of a chronic extensive eversion of the cervical lining; by the presence of considerable hypertrophy of the cervix, the result of laceration, and the more so if hypertrophy and laceration be conjoined; by the presence of chronic, severe local pain, evidently traceable to the irritation of a raw surface less extensive in amount, or traceable to cicatricial hardening at the bottom of the fissure; by the association of marked laceration, with a troublesome displacement of the body of the uterus; by the recurrence of repeated miscarriages in a chronic case; by the presence of an extensive recent laceration, even in cases where no severe symptoms have had time to develop, with the view of preventing (1) cellulitis; (2) the occurrence of cancer; (3) the supervention of symptoms generally; lastly, by the presence of general severe prostration, difficulty in locomotion, etc., obviously traceable to laceration."

The same subject was also treated of in a paper read before the British Gynæcological Society by Dr. R. T. Smith, and reported in the same number of the *British Medical Journal*. He had performed the operation in more than fifty cases, in which he considered the lesion the essential cause of chronic uterine affections, of protracted discharges, of periuterine inflammation, and of other serious disorders. He had operated on several patients from forty-seven to fifty years old, where there had been tenderness, menorrhagia, and various neuroses, with almost immediate and permanent relief. He operated in all cases of laceration in which there was any family history of cancer.

ETIOLOGY OF RETROVERSIO FLEXIO.

Dr. Harrison[4] considers the explanations of the mechanism of the production of retroversio-flexio as usually given in the text-books faulty. The two malpositions may be studied together, as they usually coexist, the versio being a transitory state, which develops into flexio. This condition may occur acutely as a result of increased intra-abdominal pressure, violence, etc., but is usually evoked by causes of a chronic character. Dr. Harrison does not share the opinion of the majority of gynæcologists, that retroflexion is rare in the virgin.

The first cause which he mentions is an arrest of development, which consists in an abnormally long portio-intermedia and short vagina, and especially a short anterior vaginal wall. The ordinary sequence of events is this: With these anatomical conditions when the bladder is full, such a uterus must lie in the axis of the vagina, and instead of a retro-positio, or displacement of the whole uterus bodily backwards, a retroversio is caused. This may became permanent from the supervention of inflammation or other cause, or, which is the more common event, a relaxation of the sacro-uterine ligaments occurs, which gives rise to retroflexio. These ligaments have been very carefully described by Luschka, and more recently by Küstner. If these become relaxed, the vaginal portio comes to stand forward, and the body of the uterus backward, and the emptying of the rectum and the filling of the bladder alter the relation of the uterus to the abdominal viscera, until intra-abdominal pressure affects the anterior, rather than the posterior surface, and the fundus is forced into the hollow of the sacrum.

Parametritis posterior is a common cause of the weakened condition of these ligaments, as after the absorption of the exudation they lose their contractility and elasticity.

Another frequent cause of retroflexio is laceration of the cervix. Here, when the tear is deep, inflammatory processes are apt to be set up in the corresponding side, and usually end in cicatricial contraction. The broad ligaments fail to act freely, the uterus recovers its position of anteversion only slowly, and with a full bladder, instead of the position of backward displacement in toto, it rotates on its longitudinal axis, and hence is more easily pushed over into retroflexio.

He concludes with the proposition that neither prolapse of the vaginal wall, whether due to subinvolution or to loss of the perineum, nor a uterus in a state of subinvolution, is competent to exert such a traction as to cause retroversio-flexio, provided the ligaments that maintain the uterus in situ are performing their normal functions.

[4] New York Medical Journal, April 17, 1886.

Reports of Societies.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

C. M. GREEN, M.D., SECRETARY.

APRIL 10, 1886, the President, DR. A. D. SINCLAIR, in the chair.

DR. J. G. BLAKE reported a case of

ALBUMINURIC RETINITIS.[1]

DR. H. W. WILLIAMS said that in a considerable number of cases, in his own experience, the prognosis of blindness occurring during pregnancy, and associated with albuminous urine, is nearly always favorable, in the absence of marked retinal lesions; although the loss of vision may be temporarily almost total. Recovery of sight may follow the parturition, or may be considerably delayed; the albumen meanwhile gradually disappearing from the urine.

[1] See page 49.

A similar loss of visual power, with a like favorable prognosis, may occur after childbirth, as in cases of excessive lactation. But where, during or after pregnancy, marked structural evidences of nephritic retinitis are disclosed by the ophthalmoscope, a favorable ultimate result of the concurrent renal disease is not to be anticipated; although, as is often true in other cases of albuminuric retinitis, intervals of amelioration of the symptoms, and even of improvement in the ophthalmoscopic appearances, may occur: and the fatal termination may be deferred for many months.

In the cases first referred to, induction of premature labor would be needless: in the last-mentioned conditions it would be of no avail.

Rarely, cases also occur, in which anæmic conditions of the retina, or of the brain, perhaps a consequence of flooding during or after parturition, are followed, within a few days, by partial or complete loss of vision, without showing at the time marked changes in the retinal circulation. Here the prognosis is less favorable for complete recovery of the functions of the delicate perceptive structures of the retina.

Dr. Williams has seen a few cases of another grave ocular lesion, sometimes a sequel of parturition: a purulent choroiditis and suppuration of the contents of the globe, from septic intra-ocular thrombosis. If the entire system is not fatally involved in the puerperal infection, only one of the eyes may be thus disorganized; and, in such case, evisceration of the sloughy contents of the eyeball should be done, as soon as the condition is recognized; as a means of relieving the intense suffering, and lessening the chances of further mischief.

Dr. C. E. Stedman said that optic neuritis was sometimes associated with non-puerperal uterine disturbances, and instanced the case of a young lady, sixteen years of age, who had never menstruated and who suffered with optic neuritis of the left eye with impaired vision: there was no albuminuria. After a time the catamenia appeared and re-appeared: the neuritis gradually faded away, and now at the age of twenty-two the patient sees perfectly well.

SALT INFUSION IN THE TREATMENT OF HÆMORRHAGE.

Dr. F. B. Harrington, present by invitation, said that the patient, whose case he had reported to the Society at their February meeting,[2] had entirely recovered and walked out a week ago. The catamenia appeared six weeks after labor. The breasts began to flatten immediately after the birth of the child. Dr. Harrington also referred to a paper he had recently read before the Boston Society for Medical Observation, in which he had tabulated a number of cases reported by others: of fifteen cases of uncomplicated hæmorrhage, fourteen recovered. He also pointed out that the infusion should not be performed too rapidly, on account of the danger of overpowering the heart.

Dr. Strong said that to be successful in restoring the proper volume to the circulation, one must generally use a large quantity of the salt solution: he thought failure was often due to the use of too small a quantity.

Dr. Blake said he had tried transfusion of milk twice, but with temporary relief only. The idea of the salt solution infusion is to give the heart something to work on; but to be of any value the amount should be large.

[2] Vol. CXIV, No. 9, page 197, of this Journal.

Dr. H. W. Williams said that this treatment was tried in the Cholera Hospital many years ago, and there was immediate improvement in a certain number of cases: the pulse improved and the sweating diminished; but no cases recovered.

Dr. Harrington thought that not much good was to be expected in cholera, general peritonitis, etc., although favorable results had been obtained in typhoid. But the most appropriate use of salt infusion is in uncomplicated cases of hæmorrhage, in which it is desired simply to add to the amount of fluid in the vessels.

CONGENITAL ANIDROSIS.

Dr. C. E. Stedman spoke of a case of eclampsia in which he gave one-third of a grain of pilocarpine and repeated it twice, but failed to produce perspiration: the hot-air bath was also ineffectual. He learned that the patient never sweat when well. The pilocarpine spent its whole force in the salivary glands. The paitent did well, although the child was lost.

Dr. Davenport said he had seen one such case, which terminated fatally.

Dr. Blake recalled Dr. Clarke's teaching, that it was necessary in fevers to bring the skin down to the sweating point, which is about 101° F., before sweating will take place.

Dr. Sinclair alluded to the peculiar feeling of the skin in those who do not sweat, akin to icthyosis.

Dr. Lyman said that some people never sweat, even in hot weather: such people suffer much more from the heat than those who perspire freely.

Dr. Harrington said there was a myxodematous condition of the skin glands in those who did not sweat.

A NEW NIPPLE-SHIELD.

Dr. Forster showed Davidson's patent, duplex nipple-shield, which possessed certain advantages over other patterns.

THE USE OF PERMENGANATE OF POTASH IN AMENORRHŒA.

Dr. Lyman asked what results members had had with this method of treatment: he had himself employed it very unsatisfactorily.

Dr. Strong said that he had used it largely a year ago with out-patients, but had been able to follow up the cases in only a few instances, and therefore his results were rather limited. He believes that the drug is of no value where there is a deficient development, nor again in anæmia, but is more efficacious than any other drug when the patient is run down: he prescribes two grains four times a day, taken one hour before meals and followed with copious draughts of water. Many patients cannot take the drug before meals, and many receive no benefit from it whatever. He does not believe it has any effect to cause abortion: one patient, who thought she was not pregnant, took it for two weeks without bringing on the flow, and she was subsequently delivered of twins at full term.

Dr. Forster had used half-grain doses of permanganate for months, and with very good results.

Dr. J. Stedman thought the drug might do harm, if long continued.

— Sir James Paget has been elected a foreign associate of the French *Académie de Médecine.*

THE NEW YORK ACADEMY OF MEDICINE.

STATED meeting June 3, 1886.

DR. C. C. LEE read a paper on

THE FUTURE INFLUENCE OF SURGERY AND SURGICAL RESOURCES UPON OBSTETRICS.

There was nothing more impressive in the history of medicine, he said, than the rapid inroads made by surgery within the last few years into a domain which had been hitherto regarded as one purely medical.

Having given a *résumé* of the history of obstetrics in general, he presented a view of what had been accomplished in this department from a surgical point of view, and spoke first of Cæsarian section. He described its history, its dangers, and the method of performing it; after which he spoke of the four modifications of it, suggested respectively by Franck, of Cologne, Kehrer, of Heidelberg, Sänger, of Leipsic, and Cohnstein, of Heidelberg.

Keher's plan is described as consisting of a transverse incision through the anterior convex surface of the uterus at the level of the *os internum*, of deep sutures for the muscular walls, and superficial sutures to secure immediate contract of the peritoneal borders, and of strict antiseptic precautions during the operation, combined with subsequent drainage of the abdominal cavity. In order to cover the line of incision with peritoneum, he directs that the latter be separated from the underlying muscle for nearly a half inch from the borders of the wound.

Sänger suggested that, after the removal of the child through the ordinary incision, and a temporary elastic ligature had been placed around the cervix, a narrow strip of muscular tissue should be removed by a section running at first parallel to the borders of the wound by diverging outward as the section approached the peritoneal surface. The peritoneum was next to be detached, and allowed to cover the expanded portion of the Y-shaped section. He then advised the introduction of deep uterine sutures to the inner border of the wound (avoiding, however, the decidua), with a second set of superficial sutures designed to secure the contact of the peritoneal borders. This principle of "subperitoneal muscular resection," as it is called, has been practised by Leopold, who found it necessary, however, to make certain modifications in its applications.

The method proposed by Cohnstein was to turn the uterus completely out of the abdomen, and open it from behind; but, so far as Dr. Lee was aware, it had never been attempted in actual practice.

Having quoted from Dr. Robert Harris, of Philadelphia, the highest American authority on the Cæsarian section, to show that the greatest danger about this procedure arose from the delay commonly made in resorting to it, Dr. Lee spoke of the substitutes which had been devised to take the place of Cæsarian section. The first of these was Porro's operation, ovaro-hysterectomy, involving the removal, after the performance of the Cæsarian section, of both uterus and ovaries. This was afterwards modified by Müller, who recommended that the uterus, after the enlarging of the abnominal wound, should be tilted laterally, and withdrawn outside the abdomen previous to section.

The other substitute for the Cæsarian section was laparo-elytrotomy, as suggested and successfully practised by Dr. T. Gaillard Thomas, in which the dangers of opening into the perineum and wounding the uterus are avoided by an incision along the upper edge of Poupart's ligament, lifting the peritoneum, dissecting down to the vagina, dividing the latter transversely, and then, having reached the cervix, extracting the child through the passage thus artificially created. Although the number of cases in which laparo-elytrotomy had been performed, was as yet comparatively small, the proportion of successes thus far had been much greater than had been met with either in Cæsarian section or the Porro or Porro-Müller operation. During his remarks on this subject Dr. Lee quoted a number of statistics, most of them being from Dr. Harris' recent article in the "International Encyclopædia of Surgery."

He next took up the matter of extra-uterine pregnancy, and showed what excellent results had been accomplished by the use of electricity in the earlier months of ectopic gestation, as first successfully employed by Dr. J. G. Allen, of Philadelphia. Having spoken also of the results obtained by elytrotomy and laparotomy in the later months, he went on to treat of lacerations of the cervix uteri due to parturition. Personally, he said, he had never been successful in securing union when he attempted to repair this lesion immediately after labor, and he knew of but one surgeon who claimed to get good results in this procedure. In a large number of cases which were left to nature no subsequent operation was required.

With regard to lacerations of the perineum, however, the case was very different. Here the advantages of immediate closure were so immense that he regarded it as a matter of great importance, and he said that he would now as soon think of leaving a parturient woman with an undelivered child in the uterus as to neglect to sew up a torn perineum. The omission to do this on the part of many practitioners was the source of much suffering and misery, which might have been avoided with very little trouble.

Notwithstanding the fact that operative surgery had already accomplished so much in the field of obstetrics, he felt confident that, judging from the triumphs of the last few years, the results noted would be still more satisfactory in the future.

DR. WM. M. POLK said that this was a subject in which he was especially interested. For a considerable period after he commenced the practise of medicine he ranked himself as strictly a physician. In the course of time he became an obstetrician; but he entered upon his work in the department of midwifery with the conviction that it was simply a branch of the physician's art. It was true, of course, that surgical procedures were to be resorted to occasionally; but the much the larger part of the field, he believed, was purely medical. This feeling was to a great extent due to the training which he had received, and especially to the teachings of Professor Fordyce Barker. After a short time, however, he began to appreciate the fact that there were certain points in obstetric practice involving surgical methods, which if, at the present stage of scientific progress in the profession a man were to neglect, he would soon be driven to the wall.

When the practice of midwifery began to be taken out of the hands of women, the obstetrician had to contend against opposition on all sides. He stood, as it were, between two fires, that of the physician, who

had become developed out of the apothecary, on the one hand, and that of the surgeon, who was the regular successor of the barber, on the other. It was, therefore, only recently that obstetricians had become alive to the domain which was in reality of vast scope. At one time vesico-vaginal fistula was almost as much a reproach to the profession as cancer; but at the present large numbers of women were perfectly relieved, who formerly would have been left to drag out lives of misery and suffering. But the pendulum once started, was apt to swing a little too far, and it was probable that to-day the obstetric surgeon was not infrequently a little too free with the use of his knife.

As to lacerations of the cervix resulting from parturition, he had seen many serious cases, the rent, perhaps, extending to the vaginal roof, recover perfectly under ordinary treatment, without any operation whatever; and his views on this point were quite in agreement with those of Dr. Lee.

In the English hospitals, more than in this country, obstetricians had had to fight their way surgically against the mere physician, and also to contend against the active opposition of those recognized as general surgeons. But the same had been true to a considerable extent here also, and he was happy to say that the obstetrician, notwithstanding the indifference manifested on the one hand, and the active opposition on the other, had now won for himself an enviable position. He need only point to the matter of abdominal section. Surgeons complained that we opened the abdominal cavity too often. It might be: but that was simply a side issue. Before the obstetricians of to-day lay the grandest problem that could possibly engage their attention, namely, that in connection with the Cæsarean section. He did not doubt that within the next ten years it would be possible to eliminate entirely from practice the most repulsive of all obstetrical procedures, the destruction of the life of the fœtus by craniotomy. When this had been accomplished there would have been achieved the greatest triumph ever won in surgery; and the honor of it would belong to the obstetrician.

Dr. Fordyce Barker said that he did not hesitate to accept the position to which he had been assigned by Dr. Polk. He had long since found out that it was useless to attempt to rival many of his brilliant confreres in the matter of surgical procedure, and therefore, not being a surgeon, he was compelled to get along the best way that he could. He regretted that he had not been able to arrive in time to hear the greater part of the paper of the evening, and therefore he would confine his remarks principally to the topic to which the latter portion of it was devoted, laceration of the perineum.

He was not inclined to accept any new proposition until time and experience had determined its real merits; and for a long time he had held his opinion in regard to the immediate operation for perineal laceration in abeyance. Some years ago, at a meeting of the American Gynæcological Society, a distinguished obstetrical authority had made the statement that any physician who did not close by primary operation, a rupture of the perineum occurring in his practice, was neglectful of his duty. He did not express any positive opinion in regard to the matter at that time; but he hesitated to accept this dictum as correct, and at the present time he was still less inclined to acquiesce in its sentiment.

Dr. Barker then made the announcement that in no case that he had ever attended in his private practice had a secondary operation been performed; and this was simply for the reason that it had never been required. He would not say that he had never had any perineal laceration; but only that none of them were of such a character as to demand a secondary operation. The uterus retained its position perfectly in every instance, and no other bad result occurred from the rupture. He could furthermore say that up to the past winter, in no private case of his had a primary operation been performed.

During the season just closed, from November 1, to May 1, there had been a peculiar epidemic in this city. In consultation he had seen forty such cases; but in his own practice only one had occurred. There were no symptoms till about the sixth day, when an explosion occurred in the system; the temperature rapidly running up to 104, 105, or 106. Only one, however, of the patients that he had seen, died. In the case of the others, the symptoms all disappeared, as a rule, within three days. Out of the entire forty, he was called to see only twenty more than once. It was a significant fact, he thought, that in five out of the forty cases, the primary operation for lacerated perineum had been performed; and in only one of these had union taken place. This was the case in which the patient died. In the one that occurred in his own practice there was some contraction of the pelvis, and he delivered the child from the superior strait with the Simpson modification of Tarnier's forceps. Here there was an extensive laceration of the perineum, and the primary operation was performed; but the union did not take place.

In two cases that he knew of, in which the primary operation was performed, there was profuse uterine hæmorrhage, as a result of shock. After referring to other cases, Dr. Barker said that his mature opinion was, that while there were, no doubt, cases in which the condition of the patient was so favorable that primary union was likely to result from an immediate operation, as a rule it was safer to avoid the operation and trust to absolute cleanliness and watchful care of the patient. He could not, therefore, accept the prevalent teaching of the day; and he was glad to hear Dr. Polk express himself as he did in regard to primary operations. If there was any tendency to septic trouble, he thought the immediate sewing up of the perineum would be likely to be attended with unpleasant consequences on account of the interference which was thus caused to free drainage.

Dr. Barker then went on to speak of the marked influence which the gynæcologist had had upon the surgery of the present time, and in this connection referred to the last paper which Dr. Marion Sims had read before the Academy, in advocacy of laparotomy in traumatic lesions of the abdomen; when the late Dr. James R. Wood, in a forcible address, had argued against this procedure on the ground that while the gynæcologist would carefully prepare his patient for the operation, the general surgeon would be called upon to operate suddenly, and under the most disadvantageous circumstances.

Dr. Malcolm McLean said that he felt compelled to advocate the desirability of the primary operation in lacerations of the perineum. He had found that in those cases in which he sewed up the laceration with soft silk sutures, the result was more satisfactory than

in those which were left to nature. He did not believe, however, in using silver-wire sutures, as they were apt to displace the parts; but silk sutures, deeply and carefully placed, were generally efficient and satisfactory, while they had the advantage, at all events, of never doing any mischief, even if they did not accomplish the desired result. Moreover, they served a good purpose by their moral effect in backing up the accoucheur in case union did not take place; for in these days when so much was expected of one in the way of operative surgery, a reflection was apt to be cast upon the medical attendant if he neglected to take proper care of a lacerated perineum. In the main, however, he had found this simple operation of decided practical advantage.

DR. H. J. BOLDT spoke against the primary operation in lacerations of the cervix. If repair did not take place by nature, he said it was easy to perform the secondary operation at any subsequent time that was convenient. He therefore would protest against the immediate operation, unless there was a profuse hæmorrhage which was due to the laceration of the cervix.

DR. POLK said that he wished to correct a misapprehension on the part of Dr. Barker. His remarks were made in reference to lacerations of the cervix, and not of the perineum.

In answer to an inquiry by Dr. Barker, as to what his present views were in regard to the primary operation for perineal lacerations, Dr. Polk said that he felt constrained to say that he entirely acquiesced in the opinions expressed by Dr. McLean. He would admit, however, that there were exceptions, in which the conditions so well described by Dr. Barker contraindicated the primary operation. There were many cases in which the accoucheur had had a bad operation, or labor had been unduly prolonged, where the exciting condition of shock would be likely to be followed by hæmorrhage; and here we were perfectly justified in declining to operate. We should always be sure that the patient had not already been subjected to the risk of shock before we made any attempt to repair the laceration.

Like Dr. McLean, he greatly preferred the silk suture, and it was now some time since he had abandoned the use of wire sutures in either primary or secondary operations of this kind. Silk, properly prepared and soaked in a bichloride solution before using, was quite as efficient as silver wire. It was natural that the latter should have been preferred to all others before the days of antiseptic surgery; but now that we could summon antiseptics to our aid, we were able to dispense with the metallic suture, which was always a cause of great pain and annoyance to the patient. The withdrawing of the sutures, also, was always attended with more or less suffering.

In closing the discussion, Dr. Lee said that he differed from Dr. Barker in regard to the advisability of the closure of perineal lacerations. It might be that he had not been able to place his patients under the same favorable conditions for spontaneous recovery which the latter had; but, at all events, he had not been fortunate enough to obtain the same satisfactory results when such cases were left to nature. He then referred to the practice observed in the lying-in department of the New York Foundling Asylum, in which the patients were nearly all primiparæ. In this institution it was the uniform rule in every case, whether the patient was attended by the house-surgeon or one of the visiting physicians, that immediately after labor the condition of the perineum should be ascertained, and if it were found to be decidedly torn, to close the laceration at once. Of course, he did not wish to be understood as advocating an operation when there was merely an abrasion, or a tearing of the fourchette, which is almost universally the case with primiparæ. He did not believe, either, in operating when there was profound shock present from loss of blood, or other cause; but he had very rarely met with such a condition in his practice.

The plan which he adopted was simply to continue the chloroform under the moderate use of which the child was born, and to make an examination of the perineum; when, if a decided rupture was found, the chloroform was further continued, and the laceration repaired by means of silk sutures. Like Dr. Polk, he had not in some time employed silver-wire sutures in either primary or secondary operations. If the posterior wall of the vagina was involved in the laceration, he usually put in two or three cat-gut sutures at this point. The whole operation was a very simple one, and he had never seen shock caused by it. He always performed it under chloroform. In his practice at the Woman's Hospital he had seen many bad results, which might have been avoided, which were the direct consequence of ruptures of the perineum which were allowed to go without operation.

Recent Literature.

Textbook of Ophthalmoscopy. By EDWARD G. LORING, M.D. Part I. The normal eye, the determination of refraction, diseases of the media, physiological optics, and theory of the ophthalmoscope. New York: D. Appleton & Co. 1886. 8vo. pp. 274.

Dr. Loring has, without doubt, done more to perfect the ophthalmoscope as an instrument of precision than any other ophthalmologist. This fact, together with his well-known accuracy of observation, bespeak for a textbook on the ophthalmoscope written by him more than casual attention. The book justifies our expectations. The language is clear, concise, and accurate. The arrangement of the book is methodical, and it is evident that care and thought have been spent in its construction. The work has all the freshness of an original treatise, and is a pleasing contrast to many of the hastily-compiled so-called text-books in medical literature.

The first two chapters are devoted to the methods of using the ophthalmoscope. The third chapter contains the anatomy of the fundus of the normal eye. This chapter is unique in English literature. Nowhere else is it possible for the student to find the minute anatomy of the optic nerve, retina and choroid so elaborately described in one work. In fact, so clear an idea of the parts could heretofore only be obtained by those who had free access to the library of a specialist; and the student of the future will encounter fewer difficulties in understanding what he sees in the fundus because this chapter and the one succeeding it have been written. The fourth chapter describes the fundus of the normal eye as seen by the ophthalmoscope. The appearances of the various parts as thus seen are

well described, and much attention is given to the description of anomalies, a subject too often slighted in text-books of ophthalmology. Dr. Loring has been wise to give much of this, the first part of his work, to the appearance of the normal eye-ground and its variations, for a lack of this knowledge is, in fact, the greatest obstacle that the learner meets in the use of the ophthalmoscope.

The fifth chapter gives the ophthalmoscopic methods of determining the refraction of an eye. The manner of estimating the refraction by means of the upright image is clearly and succinctly given, but when our author approaches the subject of the method of determining the refraction of the eye by retinoscopy, he seems to be entirely at fault. For the manner of procedure in this method of examination he quotes word for word a foot-note in Donders' classical work on the accommodation and refraction of the eye. That foot-note is an extract from a letter from Bowman to Donders, calling attention to the phenomena seen when a mirror is used as described therein. The manner of using the mirror there described is not the manner of using it in modern retinoscopy. The entire subject is then summarily dismissed in the following manner: "It still remains, however, in my opinion, the most difficult and least satisfactory of any of the methods of determining the refraction of the eye. . . . I would refer the curious, however, and those fond of optical problems for their own sake, to papers on the subject by etc., etc."

It would be no more absurd for an author writing an encyclopedic article on methods of communication by means of electricity, after giving an elaborate description of the telegraph, to dismiss the subject of the telephone somewhat as follows: "There is a means of conveying the human voice, somewhat imperfectly, by means of electricity, over long reaches of wire, but it still remains, in my opinion, the most vexatious and unsatisfactory of all methods of electrical communication, etc., etc." This omission of a procedure in common use and highly esteemed by most English and many American ophthalmologists, whatever might be the author's opinion of it, is strange in a book otherwise so carefully prepared.

In the succeeding chapter the examination of the eye by means of the oblique light and direct illumination by the minor is very clear in its minuteness of description. There is an appendix to the book containing a simple explanation of physiological optics, the theory of the ophthalmoscope, and a description of the ophthalmoscope devised by the author. The book is well printed, on excellent paper, and has a neat binding. It is well and judiciously illustrated by wood-cuts and diagrams; the colored plates are good, but the frontispiece is much the best piece of workmanship of this kind in the book. Taken altogether it is a book that bids fair to become classical. M. S.

Diseases of the Digestive Organs in Infancy and Childhood, with Chapters on the Investigation of Disease and on the General Management of Children. By Louis Starr, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania; Physician to the Children's Hospital, Philadelphia, etc., with colored plate and other illustrations. Philadelphia: P. Blakiston, Son & Co., No. 1012 Walnut Street, 1886.

This work on the digestive organs of children is presented to us in most excellent form both as to type and binding, and is a very attractive book. There is nothing especially original in the text and it at times falls short of what we would be lead to expect in a discussion of this important branch of pediatrics; it is however, valuable as stating succinctly what is good in the older books. Possibly the part where the analysis of milk is discussed is not so satisfactory as if the more modern analyses had been taken as a basis for the deductions which are made on this subject, but the chapters on "Investigation of Disease" and "General Management," add much to the value of the book. It is to be noticed that the author does not introduce into his nomenclature the term dyspepsia, classifying instead, the symptoms belonging to this set of cases under the general term catarrh.

Cutaneous Memoranda. By Henry G. Piffard, A.M., M.D. Third Edition. New York: Wm. Wood & Co. 1885.

The endeavor to present a consideration of cutaneous diseases, including syphilis, in 264 pages of 32mo, is an application of the homœopathic principle of infinitesimal doses, to the administration of knowledge, which probably induced the *Homœopathic Times* to say of a former edition of this book that it "Can have no superior." The classification used is a peculiar one of the author, which is based on that of Alibert. Pathology is neglected, as it is in most manuals, while the best thing in the book is the chapter on the treatment of syphilis, which is excellent.

Lectures on Syphilis. By G. Frank Lydston, M.D. Chicago: A. M. Wood & Co. 1885.

These are nine lectures on syphilis, given at the Chicago College of Physicians and Surgeons, in which the views taken of the nature of the disease and its treatment are for the most part rational and proper ones, presented in a commonplace manner.

The Student's Manual of Venereal Diseases. By Berkeley Hill, M.D., and Arthur Cooper, M.D. Fourth Edition. Philadelphia: P. Blakiston, Son & Co. 1886.

The object of this manual is "to place before the student, as concisely as possible, the main elementary facts relating to venereal diseases and their treatment" has been accomplished in 119 pages, 16mo, to which are added thirteen pages containing various therapeutic formulæ. The pernicious advice to administer mercury "whenever a patient has a hard based indolent sore with enlarged inguinal glands" is given, but in general the teaching of the book is good, although too condensed to admit of much perspective in the presentation of the subject.

Venereal Memoranda. By P. A. Morrow, A.M., M.D. New York: Wm. Wood & Co. 1885.

This is the aphoristical statement in 321 pages of 32mo, of the present knowledge with regard to the venereal diseases. The work is well done and it is the best of these "manuals," which are more useful in recalling already acquired and forgotten knowledge than for purposes of primary instruction. G. H. T.

— Professor Breisky, of Prague, has been appointed to succeed Professor Spæth as chief of the second clinic for obstetrics in the Vienna General Hospital.

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THE DIAGNOSIS OF INFECTIOUS DISEASES.

THERE are no diseases in regard to which the general practitioner of medicine is more certain to be called upon to make a diagnosis than the ordinary infectious diseases, measles, scarlet fever, typhoid and typhus fever, diphtheria, etc. These diseases, it is sad to confess, are most of them endemic in all our large cities and towns. The physician may never see a case of perforating ulcer, of Dupuytren's disease, of Basedow's disease, but he is quite sure sooner or later — and sooner rather than later—to be called upon to say whether some patient has measles or scarlet fever or diphtheria; whether he has typhoid or typhus fever; whether variola or varicella is present, or whether a purpura and urticaria or some other non-infectious disturbance of nutrition and circulation is simulating some one of the infectious diseases.

When summoned for such a decision the responsibility of the physician, moreover, is not limited to the welfare of the individual patient, but the prosperity of a whole community and the lives of many fellow-citizens may be, and often are, dependent upon a correct decision being reached. A failure to recognize a case of essential anæmia is likely to do little harm except to the physician's reputation as a diagnostician, and very possibly not even to that; but calling scarlet fever tonsillitis, or hæmorrhagic small-pox purpura, or *vice versâ*, offers opportunity to consequences calculated to make the doctor wish he had chosen some other calling.

The differential recognition of a typical case of the infectious diseases is generally easy enough, especially if attending circumstances are carefully considered; and it is, perhaps, owing partly to this that they prove less attractive subjects of study and observation to medical students than rarer and less important forms of disease. But the exceptional variations from the type — as shown by the occurrence, for instance, of an eruptive fever without the eruption — are both sufficiently numerous and remarkable to amply repay and exercise professional curiosity and diagnostic skill.

Owing to vaccination with strict separation of the sick and to improved hygienic surroundings of the poorer classes, small-pox and typhus fever have happily become so rare that it may show no want of zeal or intelligence on the part of the young practitioner should he hesitate to pronounce a positive opinion in a given case of either of these diseases. In view of the possible evils to the community of a failure to announce a real case of small-pox or typhus fever, or of the possible penalties of the law falling upon himself as a result of a mistaken announcement of such a diagnosis, the physician — unless very confident of his own judgment — will be wise always to refer doubtful cases to local health officers, and will be fortunate if living where such health officers are competent.

At a recent meeting of the New York County Medical Association a paper was read by Dr. Edward G. Janeway on "Certain Points in the Diagnosis of some of the Infectious Diseases," a report of which will presently be published in the JOURNAL, containing useful hints and suggestions for the differential diagnosis of some of the infectious diseases, and especially of small-pox. The writer's experiences as a health commissioner of the city of New York and as a visiting physician of Bellevue Hospital, have particularly fitted him to speak with profit to his fellow practitioners on such a subject, with a knowledge of their strength and weakness, as well as of the difficulties and dangers they encounter. Instances of confusion between small-pox and measles, scarlet fever, purpura, and syphilis had all fallen under his personal notice.

These points are emphasized as of assistance in establishing a diagnosis in perplexing cases:

First, it is important to know the nature of the disease from which a case not itself possessing positive features has developed.

Second, should the patient have died, this may be done by an investigation of others exposed to the originating case, these having, perhaps, a milder and more characteristic type of the malady.

Third, the result of exposure to an uncertain or malignant case without positive features, may, in some instances be a proof of the nature of the disease.

GLYCOGENESIS AND GLYCOSURIA.

As we compare the phenomena of nutrition in the vegetable and animal kingdoms, we see that the saccharine group of ternary substances has a predominant part in both, and that metamorphoses in which sugar in some form is the principal factor are essential to all the vital and formative processes. The seed cannot germinate till the starch in its cells is transformed into liquid glucose to nourish the sprouting cotyledons and plumule, in which change, heat and force are evolved by breaking up of the sugar into simple elements: a portion of the undecomposed sugar passes by dehydration into cellulose, the substance of which the tissue of the plant consists. The subsequent

growth and development of the plant or tree is a continued repetition of this nutritive metamorphosis; insoluble starch, generated from the carbonic acid and water of the atmosphere by the chlorophyle of the leaf, becomes converted into soluble dextrine and glucose and carried in the sap to distant parts where it is reconverted into amyloid granules and stored away for future use in certain receptacles called by Sachs the "reservoirs of reserve materials (seeds, tubers, bulbs, roots, etc.); a part subserves immediate uses by being turned back into carbonic acid and water, or changed into cellulose and woody fibre.

No less important a rôle is played by this group in the animal kingdom, where, as in the vegetable, starch is converted into sugar before it becomes assimilable. In all mammals the placental blood contains sugar in abundance, and the tissues of the embryo are rich in amyloid principle, or zoamyline.[1] The amniotic liquid of cows during the first months of gestation was found by Prout to contain large quantities of sugar of milk and lactates, and Berzelius deduces from this fact the conclusion: "that the constituent principles of the liquor amnii are destined to be absorbed by the fœtus and to serve for its development, since the same substances are also found in milk."[2] Although, owing to the greater complexity of the animal organization it is not easy to designate all the uses and all the mutations of sugar in the animal economy, yet the calorifacient and force-producing properties of this aliment are universally recognized; there is reason to believe that the force manifested in muscular contraction is derived from the combustion in the muscular substance of a form of sugar; if, moreover, it is not clear how this hydrate of carbon can assist in the fabrication of cells and protein structures, the fact, nevertheless, is becoming acknowledged by histologists that sugar is a formative material of prime value and importance. "When we reflect," says Bouchard, "that all the sugar utilized by the tissues results from the transformation of hepatic glycogen, and that this liver-sugar may derive its origin from certain azotized substances, since in carniverous animals the blood and tissues contain a notable quantity of saccharine material, generated by the liver, it is natural to suppose that if the liver breaks up azotized substances to set free glycogen and then sugar, so also the tissues may reconstitute protein substances by combining sugar with some azotized radical."[3]

But the analogy between the plant and the animal in reference to this special subject goes still farther. As the plant stores up in special depots, such as the roots, bulbs, parachyma of the stem and cambrium, the sugar-forming material, to be a reserve fund for future use, so in the animal, during the first half of fœtal life (Robin), the lungs and muscles subserve the same purpose; afterwards, this function is performed by the liver, which becomes the reservoir *par excellence* of amyloid substance. This amyloid substance, like starch, is insoluble, and its reactions to iodine are similar to those of starch; under the influence of a ferment peculiar to the liver, it undergoes transformation into glucose, and is the source of all the utilizable sugar of the economy.[4] Bernard called this peculiar amyloid matter glycogen, and into this substance all the saccharine products of digestion must be converted before they are available for the uses of the organism. According to the experiments of Pavy (Guy's Hosp. Rep., 1859), sugar is generated in but feeble quantities at a time by the liver, being delivered over to the economy as it is wanted; the relative proportion of sugar in the blood to the whole mass of that liquid, according to the estimate of Bouchard, is as 1.30 to 1,000 for arterial, and .90 per 1,000 for venous blood. The mass total of the blood of a man weighing sixty-five kilograms will lose one gramme of sugar in passing from the arterial to the venous state.

According to the observations of Claude Bernard, the formation of glycogen by the liver is intermittent, alternating with the production of bile. The sugar is formed during digestion; the bile, on the contrary, is produced during abstinence, flowing into the gall bladder and intestine. (These observations were made on snails).[5]

When the quantity of sugar generated in the liver and absorbed by the blood of the hepatic veins exceeds 3 per 1,000 of the whole mass of the blood (Lehmann), it passes into the urine; in other words, glycosuria results. It is, in fact, pathologically certain that the liver may, under certain circumstances, manufacture more glucose than can be appropriated by the economy, and this excess is eliminated by the kidneys.

Although there is still much obscurity as to the precise relationship of the liver to saccharine diabetes, and although profound pathologists like Bouchard look upon this disease as fundamentally a vice of nutrition in the tissues which normally appropriate sugar, yet for all practical purposes, and till better informed, we cannot go far astray in considering glycosuria (with Longet and Lecorché) as a functional perturbation of the liver. The fact that the liver may become subsequently the seat of inflammatory lesions does not militate against the view that glycosuria or diabetes is primarily, in the words of Lecorché, "a neurosis of the liver, in virtue of which the glycogenic functions of this organ are augmented."[6]

Lecorché, (who has lately written a very able work on Diabetes) shows conclusively that this functional disturbance may be of central origin (brain, medulla, etc.), and here Dickinson has pointed at the frequent concomitance of cerebral lesions with diabetes, or it may be of peripheral origin and result from disorder of the hepatic circulation by an obstacle to the respiration, by compression of the liver by direct or reflex irritation of the vaso-motor nerves. (Schiff). The production of artificial diabetes by the introduction of

[1] Pavy. The Influence of Diet on the Liver. London, 1859.
[2] Longet. Traité de Phys. II. 446.
[3] Maladies par ralentissement de la nutrition. Chap. XII.
[4] This has been shown by Bernard and other experimenters. See also Bouchard, loc. cit.
[5] Claude Bernard, Physiologie Operatoire, p. 306.
[6] Lecorché Etudes Médecales, Paris, 1851, p. 19.

irritating substances (ether, chloroform, turpentine) into the blood of the portal vein, seems to Longet to favor this view, and he adds that, "as for the influence of irritation of the pneumogastrics of puncture of the floor of the fourth ventricle on the production of the sugar by the liver, Bernard himself refers all these effects to a common agency, to the reflex excitation of the vaso-moter nerves of the liver, and to the active congestion of the hepatic vessels resulting therefrom: the more abundant afflux of blood to the organ, the greater activity of nutrition, the increased production of sugar are thus three correlative terms. The puncture of the cord *below* the phrenic nerves slows the abdominal circulation, the vessels of the liver contain less blood, the temperature falls, nutrition is retarded, and sugar production is reduced to a minimum."

It is believed that most (if not all) of these facts, experimental as pathological, which have a bearing on glycosuria, will fit into the above theory, which, as before said, makes of diabetes a functional disease of the liver.

AN ISLAND SANATORIUM FOR CHILDREN.

THE opening of the new sanatorium at Lowell Island deserves more than a passing comment. Although the list of our charitable institutions is a large one, yet there has been hitherto organized no attempt to afford the treatment of sea-side air for the class which may be termed the scrofulous and rachitic. The Sea Shore Home has devoted its accommodations and means chiefly to the more urgent care of young children whose death-rate in our heated months is so great from intestinal disorders.

It is well known that in many of the continental countries, sea air is looked upon as almost a panacea for that class of disorders of nutrition which is shown in the disorders of joints and bones.

In France is the famous Hospital at Borck, in parts of Germany the Baltic is utilized, and in Italy the Adriatic and Mediterranean afford ample opportunity for the fresh sea air so needed by the poor, crowded in the narrow streets and wretched buildings of the Italian cities and towns. England has, in a measure, used her coast for the same purpose.

The class presenting such disorders in continental cities has been a relatively large one, but it is only within a comparatively short time, since the influx of a large foreign poor class, that there has been any necessity for such care in our own country. The native American population is almost entirely free from rickets and though not exempt from the tuberculous joint-affections, yet they have as a rule been able to give the requisite care for such cases without organized help.

At the present time, however, our large cities contain besides a very large contingent of Irish and Irish Americans, (a class comparatively free from rachitic disorders, but not from the tuberculous affections), many Italians and Portuguese, among whom rickets is quite common. Furthermore the conditions of our increasing cities favor the development of such disorders.

The difficulty of utilizing our sea coast for such a sanatorium as has just been opened, is chiefly a climatic one. The sea shore summer on our coast is a short one, involving in such an institution, necessarily a large amount of expense *per capita* and a short time of activity. It is for this reason that the managers of the Convalescent Home for the Children's Hospital placed their institution twenty miles from the coast on high land, in a place where the season is longer, if not as free from July heat. This plan has also been followed by the Massachusetts General Hospital in their Convalescent Hospital at Belmont.

In adopting the sea coast plan for their Institute the managers of the Lowell Island Sanitorium were influenced by the generous offer of the Island fully equipped for a summer hotel, and also by the hope that the beneficial effect of sea air would be especially manifest in children suffering from chronic malnutrition, a belief which is entertained by all medical authorities.

It is to be hoped that the financial support of the Lowell Island plan may be such as to justify its continuance.

MEDICAL NOTES.

— An exhibition of the usual phenomena of hypnotism by a Signor Donato, which has been attended by a good deal of popular interest and excitement in Milan, has revealed the fact that the Italian authorities have the power, apparently, of putting a legal veto on all such proceedings, if they are pronounced injurious to the subjects of the experiments by medical or scientific experts whom the authorities consult. According to the *British Medical Journal*, the Prefect did thus put an end to the performances of Donato, on the passing of a motion by the Medical Society of Milan, that the experiments were injurious to the nervous systems of those who submitted to them, and referred the matter to the central authority at Rome, who consulted the Upper Sanitary Council of the Kingdom. Baccelli, the President of the Council, having requested and obtained permission to summon some of the leading Italian physiologists and psychologists to the assistance of the sanitary members, a meeting took place, and a resolution was passed to the effect that, for the protection of the liberty of every person, it was essential to prevent experiments which, while abolishing the consciousness of actions, produce morbid psychical effects on predisposed persons, and render them subject to the will of others. The Council says that public displays of hypnotism must produce great disturbance in the nervous susceptibilities of the spectators, and maintains that physiology and clinical experience offer decisive proof of this assertion. It is certain that the Government will empower the local authorities to act on this opinion, and that such experiments as Donato's will be no longer tolerated in any Italian city where the Prefect, or his representative, thinks it worth while to interfere.

— A veracious newspaper story comes from the West of a man, who, in a fit of despondency, swallowed a bottle of somebody's hair restorer, and on his death with obscure symptoms some years later, the whole abdominal cavity was found to be lined with a thick growth of hair, attesting the unfailing action of the hair persuader; which sounds like the chestnut regarding a kindred remedy, which, being accidentally spilled on the floor, produced a door-mat.

BOSTON.

— The Board of Health has finally voted to pass without disinfection a cargo of rags detained at quarantine since May, 1885, the disinfection of which has been a *casus belli* between the Board and the importers during all these months.

— Two cases of yellow fever were removed to the quarantine hospital lately from the forecastle of a brig which had visited the ports of Ponce and Miragoane, Porto Rico. The first case made its appearance when three days out, and the second when eight days out. The brig was detained at quarantine for fumigation and general cleaning.

NEW YORK.

— It was stated July 16th, that the rabbits which were inoculated by virus taken from the dog which bit the son of Dr. Newell, of Jersey City, who was recently treated by the Pasteur method by Dr. Valentine Mott, are dying of hydrophobia. Young Newell has as yet remained perfectly well, though the wound made by the bite has been somewhat slow in healing.

— During the week ending at noon July 10th, 1,111 deaths were reported at the Bureau of Vital Statistics, an increase of 203 over the mortality of the corresponding week last year. This large death-rate is directly attributable to the hot weather, and 683 out of the total number of deaths reported, were among children under five years of age. On July 9th, the highest mortality during the week, was reached, namely, 221.

Miscellany.

SCIENTIFIC ADVANCE IN THE TREATMENT OF TUMORS OF THE BRAIN.

Experimental research is constantly adding to the resources of the curative art, and is aiding to achieve new triumphs over diseases hitherto beyond reach. A correspondent writes: In a paper read before the Royal Society on June 10th, Dr. C. E. Beevor and Professor Victor Horsley, F.R.S., gave the result of an experimental investigation of the functions of that area of the cortex of the brain, which Dr. Ferrier showed to be the centre for the movement of the upper limb. They found that, when the upper part of this area was stimulated, the movements which followed commenced in the shoulder; that, when the lowest part was stimulated, the movements commenced in the thumb; and that, when the intermediate part was stimulated, the movements commenced in the wrist. These phenomena will be seen to be in agreement with the observations on the priority and the "march" of movements made by Dr. Hughlings Jackson in the particular type of epilepsy to which his name is often applied. It was not long before an occasion arose for applying the knowledge gained by these experiments to the cure of disease. A man was admitted into the National Epileptic Hospital (to which both Dr. Beevor and Mr. Horsley are attached), suffering from Jacksonian epilepsy, by which he had been incapacitated for two years. The fits began in the thumb; and Dr. Hughlings Jackson, under whose care the patient was, believed that the case was one to which the new knowledge with regard to the situation of the centre for the thumb might be applied, although the symptoms diagnostic of tumor were very vague. Owing to the great difference in complexity between the brain of the monkey and of man, there was, when the investigations of the functions of the cortex of the brain were first undertaken, considerable difficulty in applying the results obtained. At the present time however, these difficulties have been almost completely overcome, and the relation of the cranium to the subjacent convolutions has been thoroughly worked out. Mr. Horsley, therefore, although the patient presented no external signs of disease, and the skull had not been injured in any way, was yet able, by measurement, to apply his trephine over the cortical area which contained the thumb-centre. On removing the piece of bone cut out by the trephine on its first application, a tumor was detected immediately beneath. The hole made by the trephine was enlarged, and the tumor, together with the rest of the thumb-centre, was freely excised. As in the case to which reference was made a fortnight ago, Mr. Horsley treated the wound on precisely the same principles as those which he had found to be successful with monkeys after experimental operations, and the result has left nothing to be desired. The operation in this second case was performed on June 21st, and the wound healed by immediate union, so that on June 26th there was only a very small granulating surface, where drainage had been maintained. We find, on inquiry, that a week after the operation, the man was quite well, had had no fits, and was recovering power in the paralyzed limb.— *British Medical Journal.*

HOMŒOPATHIC TREATMENT OF MORAL INSANITY.

It may interest our readers to read of the definiteness of aim with which the homœopathic practitioner approaches the treatment of moral insanity. In the *Hahnemannian Monthly*, the following, among other therapeutic lists, are given for meeting the whole range of manifestations of this malady:

"*Hatred of work:* Spongia. *Arrogance:* Alum, Arn., Chin., Cupr., Fer., Hyosc., Ipec., *Lach.*, Lyc., Paris., *Platina, Stram.*, Verat. *Cruelty:* Anacardium, Crocus, Opium. *Cursing:* Anacardium, Corall. rubra, Lycopod., Nitric acid, Nux, Pulsatilla, Veratrum, *Fault-finding:* Ars., Ipec. *Want of religious feeling: Anacardium*, Colocynthis. *Hard-heartedness: Anarcardium*, Crocus. *Inhumanity:* Anacardium, Opium. *Kleptomania:* Ars., Bryo., Kali carb., Lycopod., Nux, Puls., Sep., Sulf. *Malice: Acon., Anacardium*, Ars., Bell., Canth., Caps., Carb. an., Chin., Cupr., Guaj., *Hyosc., Lach.*, Mosch., Nitr. acid, Natr. carb. Nux., Paris., Petrol., Plat., *Stram.* Moral feeling, want of: *Anarcardium*, Bismuth, Conium, Hyosc.,

Lauroc., Opium, Sabad. *Murder, inclination to:* Ars., Chin., *Hepar, Hyosc.*, Lach., Stram. *Slanderous disposition:* Ammon. carb., Anacardium, Ars., Bell., Borax, Hyosc., Ipec., Lycopod., Nitr. acid, *Nux*, Petrol., Sep., Stram., Veratr. *Mental derangements from alcoholic liquors:* Ars., Bell., Carb. v. Chin., Coff., Digit., Hell., Hyosc., Lach., Merc., Nitr. acid, Nux, *Opium*, Puls., Stram., Sulf."

"Clotar Mueller, in his most excellent repertory, gives:

"*Maliciousness:* Canth., Carb. an., Coff., Mosch., *Niccolum*, Nux, Petrol., Phos.; with destructiveness: Mosch. *Great obstinacy: Calc., Carb. Easily angered:* Mangan. acet., Sulf. *Cursing:* Bell., Borax, Hyosc., Lycopod., Nitr. acid, Nux, Plumb., Stram., Verat., Magnes austr. *Loss of feeling: Anacard., Opium, Stram. Homicidal desire:* Ars., Cann., Hyosc., Sec. cor., Stram."

We await with interest an improvement in the already exceptional virtue of the inhabitants of that region where the State of Massachusetts has expended so large a sum of money for the introduction of this treatment; for it is not to be supposed that the influence of these remedies will be expended entirely within the walls of the asylum in which they are administered.

It has been noticed that in some of our public institutions where *spongia*, as an outward application, is strongly indicated, there is a well-marked hatred of work. But the curative influence of the treatment has not hitherto been brilliantly successful. We trust that the internal application will not altogether supersede the external. In the same article, it is advised that, as hereditary moral obliquity is, in most cases, due to alcohol, it might "be advisable to fight fire with fire, and give our patients a very high potency of alcohol." The popularity of this treatment will evidently depend on whether or not the high dilutionist carries the day.

HEADACHE IN SCHOOL CHILDREN.

PROF. N. J. BYSTROFF has examined 7,478 boys and girls in the St. Petersburg schools during the last five years, and found headache in 868, that is, 11.6 per cent. He states that the percentage of headache increases almost in a direct progression with the age of the children, as well as with the number of hours occupied by them for mental labor; thus, while headache occurred in only five per cent. of the children aged eight, it attacked from twenty-eight to forty per cent. of the pupils aged from fourteen to eighteen. The author argues that an essential cause of obstinate headache in school children is the excessive mental strain enforced by the present educational programme, which leaves out of consideration the peculiarities of the child's nature, and the elementary principles of scientific hygiene. The overstrain brings about an increased irritability of the brain, and consecutive disturbances in the cerebral circulation. Professor Bystroff emphatically insists on the imperative necessity for permanently admitting medical men to conferences of school-boards. Of palliative measures, he mentions methodical gymnastics, mild aperients, in well-nourished children, steel in the anæmic, bromides, inhalations of oxygen, and, in severe cases, a temporary discontinuance of all studies.—*British Medical Journal*, May 15, 1886.

Correspondence.

MAINE.

ONE of the most noteworthy of recent events in medical circles in this State was the celebration of the fiftieth anniversary of the entrance into practice of the venerable Dr. Hiram H. Hill, of Augusta. All through Maine Dr. Hill has been recognized for many years as a surgeon of rare ability, of great originality of resource, and of marked devotion to his profession. In any community he would have occupied an exalted position. That he is not known widely in other parts of the country is doubtless due to the fact that he has not put on record in the medical journals the principal results of his large experience and his fertile ingenuity. Unfortunately his modesty, perhaps associated with a dislike for the quill, has confined his fame within narrow limits; but, where it has extended, he has long been acknowledged to be a master-spirit, and it was peculiarly fitting that his associates should make a public demonstration of their respect and affection for their Nestor on the completion of his half-century of active work in medicine.

The arrangements were nearly completed before Dr. Hill was informed of the design, and, with characteristic shrinking from notoriety, he immediately endeavored to effect a stay of proceedings. But his friends were not to be denied the pleasure which they had anticipated, and on the 15th of June, a banquet was spread at the Augusta House, and physicians from far and near gathered to do honor to their eminent guest. There were present, also, many prominent gentlemen from other walks of life, and the assembly was truly representative of the best element in the community.

The dinner was very elaborate, the bills of fare were printed on heavy silk, and the tables were decked with a profusion of flowers. On the wall behind the aged surgeon who is now seventy-six years old, was an oil portrait, for which he sat nearly half a century ago. Dr. H. M. Harlow, of Augusta, for a generation the superintendent of the Maine Insane Hospital, presided, and Dr. A. P. Snow, of Winthrop, acted as toast-master. The toast to "Our Honored Guest," called forth a speech which recited in quaint phrase and with much dryness of humor the leading incidents of a medical career, which, in its fidelity to noble purposes, could well be taken as a pattern by any young man. It showed how the country lad, born with an insatiable desire for knowledge of natural history, studied the living beings around him without the guidance of books or master, learned much about their structure and functions without having names for their parts and processes, and struggled laboriously up from the position of office-boy to that of deserved prominence in the medical profession; and it was all told so simply and unaffectedly as to prove that genius and humility are by no means incompatible. Then came toasts with the following titles, responded to by the gentlemen indicated: "Fifty Years ago," by Hon. J. W. Bradbury, formerly United States Senator; "The Medical School of Maine," by Prof. Alfred Mitchell, of Brunswick; "The Physician and Surgeon as a Factor in the Administration of Law," by Hon. Artemas Libbey, Justice of the Supreme Court of Maine; "The Maine Medical Association," by Dr. A. J. Fuller of Bath; "The Maine General Hospital," by Dr. S. H. Weeks, of Portland; "The State of Maine," by Hon. O. D. Baker, the Attorney General; "The Surgeons of Maine in the War," by Dr. A. Garcelon, of Lewiston, formerly Surgeon-General of the State. The speakers all united in their testimony to the professional skill, the kindness of heart, the unswerving integrity, and the high standard of honor which Dr. Hill has always manifested. Judge Libbey dwelt particularly on the qualities which are necessary to make medical expert testimony valuable, and credited Dr. Hill with that soundness of learning, unbiassed judgment, unpurchasable honesty and candor of statement, which are often conspicuously lacking in alleged experts. The exercises concluded with the reading of a poem, written for the occasion by Dr. F. H. Gerrish, of Portland. The celebration was greatly en-

joyed by all present, and every one must have been impressed with the value of such social gatherings in the cultivation of good-fellowship. Dr. Hill is still actively engaged in practice, and enters on the second half century of his professional work surrounded by hosts of friends, and cheered by the love and reverence of the community in which he has spent a long and most useful life.

For some years efforts have been made to effect the removal of the Medical Department of Bowdoin College, often known as the Medical School of Maine, from Brunswick to Portland. The Maine Medical Association at its annual meetings has often expressed its desire in this regard, and the Bowdoin Medical Alumni Association has repeatedly taken action in the same direction; and it is proper to state that these votes have not been prompted by residents of Portland, but are the expression of the unbiassed opinion of physicians of other places. Last year both of these associations sent committees to the governing boards of the college to urge immediate action, and the entire medical faculty went before the boards to plead the cause of removal. The overseers were convinced by the arguments, but the trustees were not; therefore, favorable action could not be taken. This year further efforts were made, but with no better result. The principal reason for desiring a change is that sufficient clinical advantages are not possible in Brunswick, while Portland has the Maine General Hospital, the City Hospital, the Dispensary, and other facilities for the bedside instruction of students. The profession is properly demanding a hospital connection for every medical school, and none can long prosper in these times which does not heed the call.

There is no wish to remove the Medical School from the guardianship of Bowdoin College; none would deplore such a separation more than the members of the faculty, who fully appreciate the value of the prestige which sixty-six years of excellent work have given the institution. Already nearly all the members of the faculty reside in Portland, and it is obvious that they could do more satisfactory work if the school were to be removed to that city than is now possible, with their field of instruction nearly thirty miles away from their homes. The accommodation of the profession, however, is not at all a consideration; the good of the institution is what is kept steadily in view in seeking the proposed removal. That it will be effected within a few years there is very little doubt; but first a deal of timidity, of local prejudice, of unreasonable conservatism must be overcome in the board of trustees.

The annual meeting of the Maine Medical Association this year was marked with fewer incidents of interest than is usual. A number of creditable papers were read and remarkable cases reported. Dr. Frederick C. Thayer, of Waterville, pronounced a scholarly and attractive oration on the progress of medical science. The physicians of Portland gave an elegant entertainment to the out-of-town members at the Falmouth Hotel, which was much enjoyed. The principal officers for the ensuing year are as follows: President, Dr. J. B. Walker, of Thomaston; first vice-president, Dr. F. C. Thayer, of Waterville; second vice-president, Dr. H. E. Hill, of Saco; secretary, Dr. C. D. Smith, of Portland; treasurer, Dr. A. S. Thayer, of Portland; chairman of board of censors, Dr. M. C. Wedgwood, of Lewiston; orator, Dr. E. M. Fuller, of Bath.

REPORTED MORTALITY FOR THE WEEK ENDING JULY 10, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Malarial Fevers.	Diph. and Croup.
New York	1,439,039	1111	689	43.47	10.14	34.02	1.17	4.86
Philadelphia	971,363	498	235	24.80	13.20	18.40	2.00	2.20
Brooklyn	690,000	447	282	38.43	7.00	30.86	.67	2.49
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	188	91	22.26	11.13	16.43	.53	2.65
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	274	174	42.12	9.36	33.12	—	1.80
Cincinnati	325,000	140	64	26.27	7.81	20.59	1.42	1.42
New Orleans, June 5th,	238,000	118	35	11.05	13.60	5.95	—	—
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	113	46	14.08	14.96	8.02	2.64	.88
Pittsburgh	190,000	133	85	32.25	8.25	18.00	3.00	.75
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	54	27	28.60	5.55	25.90	1.85	1.85
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	23	8	34.80	21.75	30.45	—	—
Charleston	60,145	59	24	11.83	16.90	6.76	—	—
Worcester	68,383	25	14	28.00	16.00	24.00	—	—
Lowell	64,051	38	25	31.40	5.20	28.60	—	2.60
Cambridge	59,660	20	8	20.00	15.00	5.00	5.00	5.00
Fall River	56,863	39	33	64.00	2.56	56.32	—	2.56
Lynn	45,861	—	—	—	—	—	—	—
Lawrence	38,825	19	6	35.82	14.52	29.04	—	—
Springfield	37,577	—	—	—	—	—	—	—
New Bedford	33,393	8	6	50.00	—	50.00	—	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	18	9	22.22	11.11	5.55	5.55	—
Holyoke	27,894	15	7	39.99	13.33	26.66	—	—
Chelsea	25,709	10	0	30.00	—	20.00	—	10.00
Taunton	23,674	5	1	—	—	—	—	—
Haverhill	21,795	—	—	—	—	—	—	—
Gloucester	21,713	6	1	16.66	—	—	—	—
Brockton	20,783	8	1	25.00	37.50	12.50	—	—
Newton	19,759	7	2	—	—	—	—	—
Malden	16,407	—	—	—	—	—	—	—
Fitchburg	15,375	10	2	30.00	—	—	—	—
Waltham	14,609	3	1	33.33	—	33.33	—	—
Newburyport	13,716	4	1	25.00	25.00	25.00	—	—
Northampton	12,896	—	—	—	—	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 3,367: under five years of age 1,887: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,146, consumption 354, lung diseases 258, diarrhœal diseases 882, diphtheria and croup 106, whooping-cough 31, typhoid fever 30, measles 28, scarlet fever 25, malarial fever 22, cerebro-spinal meningitis 12, puerperal fever seven. From typhoid fever, Philadelphia 10, New York, District of Columbia and Pittsburgh three each, Lawrence two, Brooklyn, Boston, Nashville, Fall River and Charleston one each. From measles, New York 14, Baltimore, eight, Pittsburgh two. Brooklyn, Boston, Cincinnati and Salem one each. From scarlet fever, Pittsburgh seven, Philadelphia six, New York five, Brooklyn and Cincinnati two each, Cambridge, Holyoke and Brockton one each. From malarial fever, New York seven, New Orleans six, Brooklyn, four, Baltimore two, Philadelphia, District of Columbia, and Charleston one each. From cerebro-spinal meningitis, New York six, Boston two, District of Columbia, Charleston, Worcester and Fall River one each. From puerperal fever, New York, Philadelphia, Boston, Cincinnati and Lynn one each, Pittsburgh two.

In the 18 cities and greater towns of Massachusetts, with a population of 918,161 (population of the State 1,941,465), the total death-rate for the week was 23.39 against 18.76 and 18.02 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending July 3d the death-rate was 17.6. Deaths reported 3,064: infants under one year of age 752; acute diseases of the respiratory organs (London) 197; measles 115, diarrhœa 86, whooping-cough 67, fever 30, scarlet fever 20.

The death-rates ranged from 13.3 in Salford to 30.4 in Preston; Birmingham 15.9; Blackburn 22.7; Bradford 17.8; Hull 18 3; Leeds 19.4; Leicester 15.7; Liverpool 18.2; London 15.8; Manchester 26.9; Newcastle-on-Tyne 21.9; Nottingham 18.7; Portsmouth 20.7; Sheffield 16.8; Sunderland 14.7.

In Edinburgh 19.7; Glasgow 24.2; Dublin 22.9.

For the week ending June 27th, in the Swiss towns, there were 49 deaths from consumption, lung diseases 16, diarrhœal diseases 14, measles 13, diphtheria and croup three, typhoid fever three, small-pox 2, whooping-cough and erysipelas each one.

The death-rates were: at Zurich 13.4; Geneva 11.1; Basle 16.6; Berne 17.0.

The meteorological record for week ending July 10, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, July 10, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, ... 4	30.115	67.2	78.3	59.6	89.0	76.0	66.0	77.0	N.	E.	W.	6	10	12	O.	C.	C.	—	—
Monday, .. 5	30.133	68.0	82.0	63.9	64.0	85.0	90.0	79.7	N.W.	S.E.	E.	6	11	1	C.	C.	C.	—	—
Tuesday, .. 6	29.979	81.8	95.4	64.1	73.0	26.0	72.0	56.7	W.	W.	W.	10	17	14	C.	C.	C.	—	—
Wednes, .. 7	29.748	84.2	94.4	73.4	62.0	40.0	47.0	49.7	W.	W.	N.	18	24	10	C.	C.	F.	—	—
Thursday, 8	29.957	72.7	81.3	70.3	61.0	66.0	47.0	58.0	N.	E.	N.	12	12	8	C.	F.	C.	—	—
Friday, ... 9	30.050	66.9	71.4	61.4	52.0	73.0	71.0	65.3	N.	N.E.	E.	12	14	5	C.	O.	F.	—	—
Saturday, .10	29.875	62.7	66.6	60.1	83.0	84.0	86.0	84.3	E.	N.E.	S.E.	3	8	3	O.	R.	C.	.1¼	Inap.
Mean, the Week.	29.979	71.9	95.4	59.6				67.3											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 10, 1886, TO JULY 16, 1886.

PAGE, CHARLES, lieutenant colonel and surgeon. Leave of absence further extended one month. S. O. 156, A. G. O., July 8, 1886.

GIBSON, JOSEPH R., major and surgeon. Granted leave of absence for three months, to take effect about August 1st. S. O. 158, A. G. O., July 10, 1886.

WATERS, WM. E., major and surgeon. Ordered for duty as post-surgeon, Fort Spokane, Wash. Ter. S. O. 112, Department of Colorado, July 2, 1886.

GARDNER, EDWIN F., captain and assistant surgeon. Granted leave of absence for two months. S. O. 158, A. G. O., July 10, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JULY 18, 1886.

WENTWORTH, A. R., assistant surgeon. Detached from the United States Steamship "Brooklyn," and wait orders.

NORTON, OLIVER D., assistant surgeon. Detached from the United States Steamship "Minnesota" and ordered to the United States Steamship "Brooklyn."

INFORMATION WANTED. ARSENIC IN SKIN DISEASES.

The Editor of the "Journal of Cutaneous and Venereal Diseases" is desirous of ascertaining to what extent arsenic is used by American physicians in the treatment of skin diseases, and also the results of their experience as to its therapeutical value.

Information upon the following points is requested of every physician who reads this:

Are you in the habit of employing arsenic, *generally*, in the treatment of skin diseases?

In what diseases of the skin have you found arsenic of superior value to other remedies?

What ill effects, if any, have you observed from its use?

What preparation of the drug do you prefer, and in what doses do you employ it?

Address, Editor of
JOURNAL OF CUTANEOUS AND VENEREAL DISEASES,
66 *West 40th Street, New York.*

BOOKS AND PAMPHLETS RECEIVED.

On Disorders of Digestion: Their Consequences and Treatment. By T. Lander Brunton, M.D., etc. London: Macmillan & Co. 1886.

Report of Proceedings of the Illinois State Board of Health. Quarterly Meeting. June 29–30, 1886.

Cincinnati College of Medicine and Surgery. Announcement of the Fifty-Second Regular Session. 1886–87.

A Guide to the Examination of the Nose, with Remarks on the Diagnosis of Diseases of the Nasal Cavities. By E. Cresswen Baber, M.D., London, Surgeon to the Brighton and Sussex Throat and Ear Dispensary. With Illustrations. New York: J. H. Vail & Co. 1886.

Detroit College of Medicine, Detroit, Mich. Announcement for Session of 1886–87.

The Twenty-fifth Annual Report of the Professor of Physical Education and Hygiene, to the Board of Trustees of Amherst College, June 29, 1886.

The "Medical Record's" Position Editorially, as to the Value of Exsection for Hip Disease. By W. R. Whitehead, M.D., of Denver, Colorado. (Reprint from Denver Medical Times.)

Fourth Annual Announcement of the Northwestern Ohio Medical College, Toledo, Ohio. Session of 1886–87.

Hydrophobia. M. Pasteur and his Methods. A Critical Analysis. By Thomas M. Dolan, M.D., F.R.C.S., Author of "The Nature and Treatment of Rabies or Hydrophobia," etc. London: H. K. Lewis, 136 Gower Street, W.C.

Erysipelas and Other Septic and Infectious Diseases Incident to Injuries and Surgical Operations Prevented by a Method of Atmospheric Purification. Second Presentation. With an original and new wood-cut, and with a Report of Cases of Laparotomy. By David Prince, M.D., Jacksonville, Ill. (From the American Practitioner and News for April 3d and 17th, 1886.)

Original Articles.

IODOFORM POISONING.[1]

BY ELBRIDGE G. CUTLER, M.D.

I. In October, 1876, a lady about sixty years of age came under my charge with cancer of the uterus involving the upper part of the vagina in front and behind. The history was of over a year's duration. The patient was very feeble and confined to her bed. On examination the uterus was found to be fixed, and an indurated nodular crater of considerable size was discovered in place of the cervix. There was much foul smelling, sanguineo-serous discharge constantly, and considerable pain and occasionally hæmorrhage. After exhausting other resources she received suppositories of cocoa-butter containing five grains each of powdered iodoform, one every second day for twelve days (six in all) to diminish the pain and discharge and to change the character of the odor. After a few days the patient became somnolent, the pulse got high, she refused food, and emaciation set in. Soon somnolence gave place to coma, emaciation progressed and she died in collapse thirty-three days after my first visit, ten days after the last suppository. There was a little albumen in the urine (drawn by catheter) but plenty of urea. It was not until some time afterward that I believed that the iodoform had proved poisonous.

II. A few months ago in a congenitally neurotic patient, with post-partum diphtheritis of the vagina and uterus, I introduced six of Mitchell's iodoform uterine bougies, containing five grains each. One was placed in the afternoon of the first day, one morning and night of the next day, and one in the morning of each of the next three days. Within an hour of having the first bougie she complained of feeling faint, and having a bad taste in the mouth; the sensations recurred several times in the night. After the second bougie this faintness increased in frequency and was attended with nausea and vomiting. After the fourth she got despondent, tearful, melancholy, was sure she never should recover, and that her baby would die. There was nausea, anorexia, and profuse sweating, and she was very sleepy most of the time. After the fifth, she fainted several times, the pulse remaining, good, full, and about eighty in the minute. She took final leave of her friends preparatory to death, did not wish to recover, and once asked to be chloroformed immediately "and make an end of it." All this time she was getting along well in other respects. She vomited two or three times and slept the greater part of the day and night. After the sixth suppository the faintness recurred and the mental depression increased. As there was no longer any appearance of diphtheritis the iodoform was omitted and the symptoms gradually disappeared. The first to depart was the nausea, faintness and bad taste, afterward the sweating, and lastly the mental depression, which continued the longest. It was fully two weeks after the last bougie before all traces of its action had disappeared.

On a somewhat extended search I have found the following cases of poisoning recorded; they are all which were accessible to me. The first thirty were collected by Koenig, who was the first to make any extended observations:

[1] Read before Boston Society for Medical Improvement, May 10th, 1886.

(1) Man, aged eighteen, tuberculous abscess above the knee, opened. One gramme iodoform applied. After a few days appearance of symptoms. Delusion that he was being pursued, attempts to leave his bed. Recovery after a few hours.

(2) Woman, forty-seven, carcinoma of breast, amputation. Iodoform and iodoform gauze applied. Lister dressing. On the fourteenth day the first symptoms began; they were ill-humor, delusions. Recovery on the twentieth day.

(3) Woman, thirty-two, fistulæ in caries of the ileum, scraped out. Filled with iodoform. Symptoms seventh night, leaves bed, attempts to escape, afterward morose behavior and perverted answers to questions. Recovery (day not stated).

(4) Man, sixty-two, caries of foot, Pirogoff's operation. Iodoform and iodoform gauze, Lister dressing. Ninth day restlessness and anxiety, leaves bed, talks confused nonsense. Recovery on the seventeenth day.

(5) Woman, twenty-four, osteo-sarcoma of jaw, resection. Iodoform and iodoform gauze, then iodoform blown in for seven days. On the eighth day sleeplessness, anxiety, fear of being carried off. Gradual improvement after removal of iodoform.

(6) Man, thirty-five, extensive burn of skin. Every second day powdered with iodoform. On seventh day, "after two dressings," talked confused nonsense, absolutely sleepless, gets out of bed, tears bed-clothes. Recovery about the twenty-eighth day.

(7) Man, sixty-eight, tuberculosis in foot, amputation. Fifty grammes iodoform (in three dressings). Eighth day restlessness, gets out of bed. Rapid disappearance of symptoms.

(8) Man, forty-eight, fracture and dislocation of ankle-joint. Drainage of foot. Sixty grammes iodoform. Beginning on the eighth day there was for three weeks confusion, restlessness, getting out of bed, stupor. Recovery about the twenty-eighth day.

(9) Woman, seventy-two, senile gangrene. Sprinkled with iodoform (thickly). After a time (not stated) temporary lethargy, delirium, defective memory, hallucinations. Death in six weeks later.

(10) Woman, seventy-three, carcinoma of rectum, operation. Eighty to one hundred grammes iodoform applied, drainage. On the eighth day restlessness, recognizes nobody, does not know where she is, jactitation. Recovery in about four weeks.

(11) Man, sixty-eight, hypertrophied prostate, no operation. Suppository of iodoform and cocoa-butter, then iodoform-vaseline per rectum. Eighth day after using the salve, confusion, delusion of being pursued, gets out of bed, attempts at flight. Recovery "after a few days."

(12) Man, seventy-one, galvanocaustic amputation of penis. Sprinkling of the scab and eight days later the wound with iodoform. Twelfth night, boisterous, during the day refusal of food. Suicidal tendencies. Recovery after "four or five days."

(13) Woman, fifty-four, tuberculosis of foot, curetting of the medullary cavity of tibia. Forty grammes iodoform placed in the cavity. Lister dressing. On the eighth night, confusion and restlessness, afterward hallucinations and refusal of food. Recovery on the eighteenth day.

(14) Woman, twenty-two, ichorous ulceration of the knee-joint, amputation. Iodoform powder and iodoform gauze. Fifty grammes to the eighteenth day. On the nineteenth night attack of insanity, hallucina-

tions. Eight days later severer attack of insanity, distracted. After twenty-seventh day improvement (gangrene occurred later).

(15) Man, twenty-one, arm injured by machinery, at first conservative surgery, then exarticulation. At first forty to fifty grammes iodoform. After operation fifteen to twenty grammes. Two days after operation restlessness, confusion. A few days after the first application of the iodoform, anxiety, afterward insanity. Recovery fifteen days after the operation.

(16) Woman, forty-three, carcinoma of breast, extirpation. Fifty to eighty grammes iodoform. Lister dressing. Night following tenth day, restlessness, bad language, then insanity, distracted. Death on twenty-first day. (Erysipelas?)

(17) Man, sixty-one, arthritis deformans, resection. Iodoform eighty grammes. Ninth day restlessness, involuntary discharges, stupor, and on seventeenth day maniacal attacks. Death on twentieth day. Collapse, œdema of lungs.

(18) Man, seventy, tuberculous sequestrum of femur, extraction. Ten to fifteen grammes iodoform. Lister dressing. Ninth day delusion of being pursued. Afterward insanity. Death about the twenty-first day (in the third week after the outbreak).

(19) Woman, sixty-nine, extirpation of breast. Iodoform (quantity not stated). Healing by first intention after nine days. On tenth night restlessness, attempts at flight. Seventeenth day maniacal attacks. Involuntary discharges. Death on twentieth day. Œdema of lungs.

(20) Man, sixty-one, caries in knee, amputation. Iodoform and iodoform gauze, six days later twenty-five grammes iodoform. On the eighth to the tenth day restlessness at night. During the day sleep, pain; eleventh day hallucinations, afterward refusal of food, death on twelfth day. Collapse.

(21) Woman, sixty-seven, tuberculous elbow-joint. Resection. Ten to fifteen grammes iodoform. Lister. Fourteenth day restlessness, confused talk, refusal of food, afterward attempts at flight during the night. Twentieth day clearer consciousness. Death the twenty-first day. Œdema of the pia.

(22) Man, sixty-three, resection of upper jaw. Powdered with iodoform, the following day blown in. Seventh day restlessness, delusion of being followed, hallucinations. Death the twenty-eighth day. Pneumonia symptoms.

(23) Man, twenty-two, complicated fracture of the leg, large incision. Every three days dressing with about fifteen grammes iodoform. Fourth night sleeplessness, restlessness, anxiety; by day rational; loss of appetite, wretched appearance. Improvement after the omission of the iodoform.

(24) Woman, forty-six, struma, extirpation. Iodoform: Lister dressing on the fifth day. Second day repeated vomiting, pulse 164, later more vomiting. On the fifth day dyspnœa, great restlessness, confused talk. Death the sixth day. Œdema of lungs. Autopsy showed fresh pneumonic nodules.

(25) Boy, five, large abscess from coxitis, incision. Sixty grammes iodoform. (Day on which symptoms began not stated). For six weeks somnolence and great perspiration. Recovery after six weeks.

(26) Boy, six, periarticular abscess of the hip-joint, scraped with sharp spoon. Twenty grammes iodoform, then iodoform pencils daily. (Day not given). Apathy, tearfulness, thirst, vomiting, fever, bloody urine. Recovery on eleventh day. Daily change of dressing.

(27) Girl, fifteen, suppuration of hip-joint, resection. Thirty grammes of iodoform, from the fourth day. Lister. Second day vomiting, nausea. Third day flexion contractures. Fourth day sopor. Involuntary discharges. From the fourth day no improvement of the nervous symptoms. Later septicæmia and death.

(28) Boy, fourteen, cheezy abscess of the hip-joint, resection. "Coffee-spoonful" iodoform, iodoform gauze. Second day restlessness, fever, stupor, stammering, and vomiting, and on the third day unconsciousness. Death on the third day. Fatty liver and kidneys.

(29) Man, fifty-one, empyema. Every third day gelatine-iodoform pencils. Cross-grained, iodoform smell and taste, anorexia, dulness of head. Thirteenth night, insanity and insane ideas, getting out of bed. By day confounding of known people. Recovery on the sixteenth day.

(30) Man, forty, stretching of sciatic nerve. After sixteen days iodoform. After two days sleeplessness and increasing restlessness. Seventh to ninth (?) day insanity, getting out of bed. Recovery on the sixteenth day.

(31) Man, sixty-one, iliac sinus after operation for hernia, incision. Three days iodoform on lint, then blown in for twenty-one days. Third day emaciation began. Nineteenth day low feeling, anorexia, dull, heavy, drowsy, disinclined to move, wandering at night, emaciation. Twenty-third to thirtieth day tongue dry, brown, emaciation, pulse 130, temperature 101.6°, hebetude, exhaustion. Three weeks later recovery out of hospital. Iodoform omitted at discharge.

(32) Man, thirty-eight, extensive burn. Iodo-vaseline after four days. Second day pulse and temperature increased. Sixth day delirium, pulse 130, temperature 101.6°, weak. On tenth day restlessness, attempts to pull off bandages and bed-clothes. On following days symptoms continue, emaciation, temperature decreases, pulse increases and is feeble. Symptoms last till end of sixth week when coma came on. Death at end of seventh week. Autopsy shows petechiæ over left lung and posterior surface of heart, congested lungs and broncho-pneumonic nodules.

(33) Child, four, extensive burn. Iodo-vaseline on lint. Second day sleepless at night, screaming suggestive of meningitis; drawing up of legs, intense headache. Temperature 104.6°, pulse 160. Screaming continued, grinding of teeth, unconsciousness, extremely restless, eyes twitching and rolling during the next three weeks, rapid pulse. Iodoform then omitted. Recovery complete on the twenty-second day after omission.

(34) Boy, eleven, lumbar abscess, incision, caries of spine. Wall of abscess wiped out with a sponge filled with iodoform. Drainage tubes. Iodized wool dressing. Third night restlessness, rise of temperature (104.6°) and pulse 138. During the next two days vertical headache, drowsiness, nausea, smell of iodoform in breath. The wounds then washed out with carbolic wash and carbolic gauze substituted for iodoform gauze. Recovery by twenty-fifth day.

(35) Woman, adult, chronic inflammation of middle ear, local application. Small ball of cotton dipped in powdered iodoform and applied, reapplication after twenty-four hours, renewed in three days. Within twenty-four hours dizziness, drowsiness increasing to

fourth day to a very marked degree, pulse almost imperceptible, breathing very slow and superficial, fainting. Iodoform washed out. Perfect recovery on the second day.

(36) Man, sixty-two, white swelling of knee-joint, scraping out of fistulæ. Twenty grammes iodoform put in fistulæ. Iodoform wadding, changed on fourth and eighth days with fresh application of ten grammes iodoform. Ninth night delirium, pain in knee, temperature 101° nearly, iodine reaction in urine, urine passed in bed. Two days later completely unconscious, refused to swallow and bit teeth together on attempts to feed him, tightly closed eyes on attempts to open same, contraction of neck muscles on attempts to move head forward, forearms convulsively contracted, twitchings in arms, increase of pulse and temperature to 140 and 103° respectively, sopor. Death on the twelfth day. Autopsy shows lepto-meningitis and splenic tumor.

(37) Woman, fifty-eight, cancer of breast, amputation and removal axillary glands. Iodoform gauze dressing, six grammes iodoform dusted in the wound. Third day apathetic, complains of feeling bad on being loudly addressed, appetite poor, tongue coated. Iodine reaction in the urine intense. Increase of somnolence and apathy. Trembling movements of hands, attempts to brush things away from face, pulse 120 to 130, temperature normal. Anorexia, pupils do not react, restlessness, increasing weakness, sopor. Death twenty-three days after the operation. Pia injected, œdematous, fatty liver, cloudy kidneys.

(38) Man, eighty-two, carcinoma at angle lower jaw, removed. Four grammes iodoform powder covered with wadding. Second day very restless, excited, tries to get out of bed, answers only on loud calling, complains of great headache, thirst; next day unconscious, jactitation, muscular twitchings of face. Fourth day pupils contracted, pulse 130, temperature 100.1°, occasional convulsive movements of the upper extremities. Fifth day involuntary discharges into bed, no iodine salts or albumen in urine. Great weakness and emaciation. Death on sixth day after the operation.

(39) Man, fifty-seven, tuberculous ostitis of ulna, resection. 150 to 200 grammes iodoform packed into wound. Lister. Second day large quantity of iodine salt in urine, frequent pulse, excited, restless, delirium at night suggestive of delirium tremens, gets out of bed. Third day strikingly quiet, lies for hours motionless, gives perverted answers to questions with stammering speech, urine and fæces passed into bed. Fourth day hard to rouse, small frequent pulse, neck muscles stiff. Seventh day unconscious, pulse and respiration more rapid, appearance of œdema of lungs, coma. Death on the ninth day. Slight chronic lepto-meningitis. Fatty degeneration of heart, kidneys and liver.

(40) Woman, sixty-three, periarticular abscess of left knee, incision, curetted. 100 to 150 grammes iodoform. Lister. Fourth day great headache, depression, loss of appetite, malaise, pulse quickened, temperature normal. Ninth day iodine reaction in urine. Eleventh day depression increased, constant somnolence, answers at random or not at all, urine involuntary. Twelfth and thirteenth day apathetic; difficult to rouse, lisps or stammers in answering, next day more comatose, stools and urine involuntary, temperature rising, symptoms continue to sixteenth day when there was œdema of the lungs. Death on sixteenth day. Heart muscles very flabby, spotted yellow and reddish brown, fatty degeneration of epithelium of cortex of kidneys.

(41) Woman, sixty one, double kolporrhaphia with perinæorrhaphia. Three to four grammes iodoform, strip of gauze. Third day (sixty hours) refuses food and medicine, fears poisoning, tries to get out of bed, delirium later, bites, scratches, cries out, hallucinations of sight, sleepless. Fifth day pupils narrow but react, thumbs turned in, neck stiff, mouth tightly closed, trismus exists, face strongly congested, eyes prominent and bright. Sixth day marked stiffness of neck, regular beating with the forearms, temperature 101°, pulse 80 full and strong, collapse in night, death. Death on the sixth day. Atrophy of one kidney, sclerosis of vessels of brain which presumably acted as predisposing conditions of poisoning.

(42) Boy, fourteen, chronic abscess in front of hip-joint, opened sinus. Washed out with ethereal solution of iodoform, iodoform and encalyptol bougies introduced every second day each containing five grammes. After a few days great depression, nausea, vomiting, pulse rapid and feeble 130 to 160, frontal headache, dull mental state, dull pain in epigastrium, emaciation, irregular pyrexia. Nine bougies used (about 5.0 grammes). Recovery in three weeks.

(43) Man, twenty-four, laryngeal phthisis. .06 grammes iodoform blown in daily. Thirtieth day irregular and intermittent pulse, fulness at stomach, faintness, exhaustion. Recovery immediate on leaving off iodoform.

(44) Woman, young, ecthymatous ulcerations. Scabs removed on head, surface sprinkled with iodoform powder. In a few hours scalp and neck swollen, quick pulse, nausea, restlessness. Recovery on seventh day.

(45) Woman, forty, syphilitic ulceration under chin. Ointment of one gramme iodoform to thirty, applied on lint. Ninth day face red and swollen, covered with vesicles. Twelfth day temperature 102°, delirious, weak and irregular pulse. Recovery on sixteenth day.

(46) Man, twenty-three, abscess under shoulder-blade. Iodoform 15.5 grammes applied in sinus in seven days. Seventh day delirious, temperature 104°, pulse 120, soon unconscious, stupor, pupils dilated, sphincters relaxed, sleepless, attempts to throw off bed-clothes, impaired muscular power, does not understand spoken words, symptoms lasted five days. Urine scanty, 1036 specific gravity, concentrated, no albumen or sugar, iodine reaction. Recovery on the eleventh day.

(47) Woman, forty, cancer of breast, secondary operation undermining skin. Twenty-five grammes iodoform powder strewn over wound and under flaps. Lister. Second day restless night, face very red, peculiar brightness in eye, pulse 110; next day very much excited, restless, cries out, spits all round herself, refuses food, constantly tries to pull off the bandages, appeared like one with acute mania, albumen and iodine in urine. The next few days unless under the influence of morphia, raved, tried to get out of bed, spat about, pulse 120 to 130, temperature 102°. Death on the ninth day.

(48) Woman, aged forty, ovariotomy (carcinoma). Partial removal. Twenty-five grammes iodoform powder put in the abdominal cavity. Lister. In one hour the temperature became 101.5°, patient became somnolent, feeble pulse, respiration very frequent and super-

ficial, sweating, sleepless night, vomited, very restless, thirst, pulse 140, respiration 32, pupils contracted. Next day same, iodine in urine. Death at night of third day with symptoms of dyspnœa.

(49) Man, forty-eight, sarcoma of thigh; amputation; drainage-tube. Drainage-tube rolled round in iodoform powder and placed. Renewed in two days. Second day, pulse 120, temperature normal; recognizes no one, does not know where he is; tries to tear off dressing, picks at bed-clothes, attempts to jump from bed. Symptoms last five days. Gradual recovery after the fifth day.

(50) Woman, fifty-eight, extirpation of rectum. A little iodoform rubbed into the cavity of the wound. Second day, restless at night; constantly talking, hallucinations; pulse rapid; end of week, loss of consciousness. Symptoms last three weeks. Recovery gradual after three weeks.

(51) Boy, of three; necrosis of tibia, operation. Wound filled with iodoform; dressing changed three times. After a time (day not stated) there was high fever, somnolence; on the skin of the body, flexor surfaces of both arms, and the inner surfaces of the thighs, a diffuse, bright red color, disappearing under pressure; islands of normal skin. Iodine, albumen, and epithelial casts in the urine. Recovery in three days. Renewal of treatment in a month brought on the same symptoms. The patient gradually became accustomed to iodoform, and was dismissed cured.

(52) Man, thirty-six, caries of rib; operation. Iodoform pencil in sinus every second day. On the tenth day, itching of the extremities; next day, urticaria nodules on the skin of the body and the extremities, from the size of a lentil to that of a three-cent piece, and of red color. Iodine in the urine; no albumen. Recovery.

(53) Woman, fifty, recurrent carcinoma of breast; operation. Thick layer of iodoform powder, nine inches long, reapplied after four days. On the tenth day, delirium at night, unconsciousness, patient emaciating, pulse weak, frequent, no fever, constant delirium, refuses food. Eleventh day, temperature 101.5°, collapse, death two days later. Death on the thirteenth day.

(54) Woman, of forty, collection of pus in knee-joint; incised, abscess in popliteal space and thigh, incision, drained. After two days, iodoform powder in wounds, and two pencils in sinuses (one gram. each). After a time (not stated), delirium, anxiety, idea of being followed, hallucinations, emaciation, feeble, rapid pulse, high fever for three days. Recovery in a few days.

(55) ——(?) Empyema necessitatis, incision. Lister. Pencil of two-grm. iodoform inserted twice. On seventh day, delirium, maniacal, pallor, anxiety; must be confined in a canvas jacket; temperature 101°, feeble pulse. Recovery in three or four days.

(56) Woman, of twenty-six, gummata on head and clavicles, ulceration, necrosis. Pills of iodoform 0.1 each (two to four daily), internally up to 42.0 grms. and unguentum iodoform, one part to ten, applied indefinitely. On the eighth day feels faint and weak on legs, double vision, lasting two and a half days, then vomiting, deep sleep, anorexia, lasting two days; then loud outcries, getting out of bed, confused talk, inability to seize and hold objects, double vision, headache. Symptoms improve, but last nine days. Recovery gradual after ninth day.

(57) Woman, sixty-nine, syphilitic necrosis of hard palate. Iodoform pills, 0.1 grm. each, two to four per diem (5.0 grammes had been taken in seven days). On the eighth day, somnolence, does not know what she says, walks clumsily and uncertain, like a drunken person; sleepless at night, headache, coma two days later, occasional incontinence of urine, which contains iodine, mild delirium, gets out of bed. Recovery gradual after the twelfth day.

(58) Woman, sixty-six, cancer of rectum; excision. Iodoform powder applied with finger to wound; iodoform gauze. In about thirty-six hours, cloudy sensorium, answers merely "yes" to all questions, difficult to feed, temperature normal, urine drawn by catheter, normal. In the night crying out; tries to get up. Next day, symptoms more intense; urine cloudy, contains enormous quantity of albumen, dark and transparent casts, epithelium, pus, fat drops. Later, iodine reaction in urine. Next day, restless, soporific, weak pulse (Pilocarpin injection, followed by much sweat and saliva; latter and urine contain iodine). Stiffness of extremities on attempting to flex them, extension easy; tracheal râles. Next day condition worse, pulse weak, intermittent, and irregular, cyanotic color, cold sweat. Transfusion, two hundred grams. blood, no reaction. Death on the fifth day. Autopsy reveals nothing.

(59) Woman, forty-seven, sarcoma of thigh; exarticulation. Iodoform gauze on third and seventh day, and on eighth day iodoform placed in wound. Gauze renewed thrice. On the sixteenth day, pupils dilated, pulse 164, passes fæces in bed, feels bad. End of day, jactitation, cries out, groans, speaks indistinctly, pulse very small, respiration very rapid; *transfusion of solution of common salt, 500 grams.;* pulse improves in strength; rate, as before, 160; continues very restless, and cries out terribly; early next morning have to apply canvas jacket; refuses food. Next day, fed by tube. Gradual improvement and recovery on fourth day.

(60) Man, forty-three, caries of rib; excision. Iodoform powder (amount not stated) to wound. Tenth to twelfth day, lassitude, anorexia, vomiting, diarrhœa; temperature normal, pulse rapid. Soon delirium, springing out of bed; tears off dressings, hallucinations, urine contains albumen and much iodine. Iodoform removed; delirium ceased, but patient remained lachrymose and rapidly emaciated. Death on —— day with dropsical symptoms.

(61) Woman, forty; lupus in face curetted. Iodoform powder (quantity not stated) to wound. In a few hours, vomiting, headache, nausea, iodoform smell and taste, diarrhœa, anorexia, lachrymosity, sensorium free, sleepless, rapid and striking loss of strength, pulse small and rapid, temperature 101° to 102°, urine contains iodine, removal of iodoform. Recovery in thirty-eight days. Recurrence of symptoms on renewal of treatment.

(62) Woman, twenty-four and a half, chronic uterine inflammation; six grams. iodoform (daily, .1 for sixty days) in the vagina. At length (day not given) depression, pulse 120, sopor. for three days; then excitation, gets out of bed, delirium, confusion, lasting some days. Recovery gradual.

(63) Man, twenty-one, suppurating glands in groin after urethritis; opened. Iodoform dressing for eight days. On the ninth day, temperature 102°; headache, somnolent, restless, dreams; omitted dressing; re-

covery. Renewed dressing, same symptoms. Recovery in few days.

(64) Man, fifty-eight, blow on head, wound five centimeters long. Wound filled with iodoform powder. On the tenth day, some fever, anorexia, headache, lasting several days; then confused, talking nonsense, attempts to escape; mania later. Quick pulse, iodine in urine. Iodoform omitted and bicarbonate of potash given internally. Recovery complete in seven days.

(65) Man, thirty-six, amputation of leg for diseased ankle. Lister. One week later, iodoform powder sprinkled on for four days, then syringed out with iodoform ether once. On the thirteenth day, breathlessness, anorexia. In the night, unconscious, by day absent-minded; tremor, temperature normal, pulse small, 120; strong iodine reaction in urine; next night escapes from bed; diminished consciousness. Recovery about the nineteenth day.

(66) Boy, of three, resection of hip; chiselling out acetabulum. Cavity washed out with saturated solution of iodoform in ether; then Lister dressing and sublimate gauze. Week later, again washed out and iodoform powder put in. In a few hours from the first application, vomiting, lasting fourteen days; great quantity of iodine in urine, little appetite. Hallucinations of sight by night, less frequent by day. Much emaciation; gradual improvement. Recovery from poisoning after a few weeks. Death from the disease some nine months later.

(67) Man, seventy-two, exarticulation for caries of toe-joint. Iodoform powder applied (small amount). On the eighth day, headache, melancholia; next day, excitation, getting out of bed. Recovery in eight or ten days.

(68) Man, old, crush of hand. Considerable iodoform powder, bound up with charpie. In a "few days," restlessness, confusion of thought, talks nonsense. Recovery shortly (not stated when).

(69) Woman, fifty-six, cancer of breast; extirpation. Iodoform powder (no statement of amount given). On the ninth day, "symptoms similar to meningitis," somnolence. Death on twentieth day. Fatty degeneration of heart, kidneys, liver; œdema of brain.

(70) Woman, fifty-two, cancer of breast; extirpation. Eight to ten grms. coarse crystalline iodoform inside, ten grms. outside. Dressing changed five times; Lister. Before the third day no appetite, refuses food. On third day, sopor, small pulse, moderate fever. Iodoform omitted ninth day; unconscious, cries out very much, excitement alternates with sopor; emaciation. Death on the thirteenth day. Œdema of pia, fatty degenerated liver, cloudy kidneys, granular heart muscle.

(71) Woman, thirty-seven, amputation of breast. Ten grms. iodoform, iodoform gauze. On the fourth day, delirium by night, weakness of memory by day, apathetic. Eighth day, excited, delirious, involuntary urine and fæces. Eleventh day, unconsciousness, thready pulse, exanthema of small, red spots on whole body, diarrhœa. Death on thirteenth day. Fatty degeneration of heart, liver, and kidneys.

(72) Woman, fifty-eight, amputation of breast. Ten grms. crystalline iodoform. Third night, restlessness, delirium, does not recognize attendants; symptoms continue and increase by day, gets out of bed. Sopor, thready pulse. Death on (?) day. Fatty degeneration of heart, kidneys, liver.

(73) Woman, forty, carcinoma of breast; parts of sternum and ribs removed. Twenty-five grms. powdered iodoform in wound. On the second day, after an unquiet night, acute mania in the morning, tears off bandages, escapes from bed, spits, cries out, refuses food; temperature 102°, pulse 120 to 130. Death on the ninth day.

(74) Woman, forty, carcinoma of ovary; partial removal. Twenty grms. crystalline iodoform to pedicle. Symptoms began on the first day with languor, somnolence, great restlessness, constant talking. Death on third day.

(75) Woman, forty-one, echinococcus of liver; opened. Fifteen grms. crystalline iodoform put in cavity. After twelve days, iodoform gauze. About the third week, great restlessness, dyspnœa, crazy ideas. Death in the fourth week.

(76) Woman, seventy, carcinoma of breast; amputation. Iodoform (amount not given) strewed on wound several days. After a few days, insane ideas. Rapid recovery after washing out iodoform.

(77) Woman, of fifty, carcinoma of breast; amputation. Iodoform (amount not stated) strewed into a place where secretion was retained a few days after operation. On the same day mania began, and lasted for eighteen days. Recovery after the eighteenth day.

Of these cases, the first thirty, as before stated, were reported by Koenig; also cases 49 and 50. Cases 31 to 34 are by Beck, 35 by Bermann, 36 and 37 by Czreny, 38 by Langsteiner, 39 and 40 by Henry, 41 by Schwarz, 42 by Clark, 43 by Coomes, 44 by Fifield, 45 by Goodell, 46 by Hayes, 47 and 48 by Hoeftmann, 51 and 52 by Zeissl; 53, 54, and 55, by Lingen; 56 and 57 by Oberlaender, 58 and 59 by Kocher, 60 and 61 by Pick, 62 by Seeligmüller, 63 by Schiffmann, 64 by Behring; 65, 66, 67, 68, by Kramer; 69, 70, 71, 72, by Hoepfl; 73, 74, 75, 76, 77, by Falkson.

(To be continued.)

A CASE OF STRICTURE OF THE ILIUM; LAPAROTOMY; STRICTURE INCISED, AND THE INCISION CLOSED WITH THE CŒCUM; DEATH ON THE NINTH DAY; AUTOPSY.

BY GEORGE W. GAY, M.D.,
Surgeon to the Boston City Hospital.

E. G., aged seven and a half years, had been troubled all his life with a most obstinate constipation. It was noticed soon after birth, and it had grown worse each year until at the time of the operation nothing had passed his bowels for thirteen days, although faithful and persevering effort had been made by means of cathartics and enemata to produce an action. About half of the patient's life had been spent in painful endeavors to empty the bowels. One or two days in every week were devoted to frequent dosings of cathartics aided by injections. A great deal of severe pain always accompanied these measures, besides occurring at frequent intervals between whiles. It was seldom that more than one or two days passed by without the patient's suffering more or less from the violent peristaltic action of the intestines. The abdomen was much distended, and the peristalsis was plainly visible, accompanied by loud gurgling, which apparently threatened an immediate dejection. The pain was principally referred to the right iliac region, and the peristalic movements were seen to begin there and to extend across the abdomen to the left side, and

[1] Read before the Surgical Section of the Suffolk District Medical Society, February 3, 1886.

return. There were two marked features in the case, namely, the absence of vomiting, and the fairly well nourished condition of the boy.

The patient was thoroughly examined under ether without detecting any obstruction, or abnormal condition to explain the obstinate constipation; strange to say that for a month after this etherization the bowels moved every day without aid. The constipation then returned, and soon became more intractable than ever, so that finally, medicine had no effect upon it. A second etherization failed to afford any relief, and it was soon evident that, unless the difficulty could be overcome by an operation, death would probably occur in the near future.

The absence of vomiting and of emaciation, the seat of the pain, and the origin of the exaggerated peristalsis, all pointed to the right iliac region as being the seat of the obstruction. After a careful consideration of the risks and future prospects in the case, the parents finally requested that an attempt should be made to relieve the patient.

The operation was performed November 24, 1885. Present and assisting Drs. Cheever, Post, Burrell, Kohr, and Timmins. Ether having been carefully given on account of the great distension of the abdomen, an incision, three or four inches in length, was made just above the symphysis on the median line. This was afterwards enlarged by a transverse cut extending toward the righ anterior spine of the ilium. A little ascitic fluid escaped from the cavity of the peritoneum, but there were no adhesions nor other signs of peritonitis.

The stricture was readily found located in the ilium at its junction with the colon. It was about an inch in length, and the calibre was half an inch in diameter, while that of the intestine above was four or five inches. The colon and rectum were full of hard fæcal matter, and the former together with the cæcum was very closely attached to the posterior wall of the abdomen, and the omentum in the vicinity of the stricture was considerably hypertrophied. The small intestines were distended with gas and semi-solid, well digested fæces.

The stricture was divided on that surface, which was free from omentum, by means of a longitudinal incision about two inches in length, extending from a point well above the constricted portion downwards into the cæcum. The bowel including the ilio-cæcal valve, was first laid open throughout this extent. Fæces were prevented from entering the peritoneal cavity by sponges packed about the wound in the bowel.

The large opening into the intestine was closed in the following manner: The ends of the incision were brought together, and the adjacent serous surfaces on each side of the wound were firmly secured in position by means of numerous interrupted, "iron-dyed" silk sutures, which did not include the mucous membrane. The wound having been closed throughout its whole extent in this manner the line of union was nearly transverse instead of being longitudinal as was the direction of the original incision. By this manœuvre the cæcum was brought up and set into the site of the stricture, not unlike a gusset, with the effect of giving a calibre of about one and a half inches to the constricted portion, a capacity nearly as great as that of the colon itself. It would seem as if ample room was thus afforded for the easy transmission of the intestinal contents into the colon, but as the autopsy showed, nothing ever passed this point after the operation.

Owing to the proverbial imperfections of the atomizer the operation was not carried out under full antiseptic precautions, but great pains were taken to keep up the body heat by means of flannels wrung out of hot carbolized water, and frequently applied to the abdomen, and the exposed intestines. The "toilet of the peritoneum" was made as carefully as after an ovariotomy, and the wound was closed by two separate and distinct sets of silk sutures, one for the peritoneum, the other for the skin, muscles and fasciæ. No drainage tube was inserted. Adhesive straps, iodoformed gauze, cotton wadding, and a flannel swathe completed the dressing.

The after treatment was most faithfully carried out by Dr. T. W. Kohr. The shock was not alarming, although the operation lasted over an hour. Very little vomiting followed. Morphiæ in doses of one-sixth of a grain was given subcutaneously every five or six hours, or as often as was required to control pain, and procure rest and quiet. The patient took food and stimulants fairly well till towards the last, yet he wasted very rapidly. Flatus escaped in the natural way on the second, as well as on several succeeding days, but no fæcal matter made its appearance. The urine, scanty at first, became more free, and was never suppressed. Two days after the operation there came symptoms of collapse; the pulse was 180, respiration sighing, skin pale and cool. Under a vigorous application of stimulants and external heat he rallied, so that on the fourth day the pulse was 112, respiration natural, and nervous system quiet. He took notice of his surroundings and called for his playthings. On the sixth day violent peristalsis set in again, and as nothing came from the bowels a careful trial was made with the catharties, which had formerly proved more or less efficacious, together with enemata of hot water, turpentine, castor oil, gruel and so on. An escape of a moderate amount of flatus was the only result. As the upper part of the abdomen was greatly distended, a No. 2 aspirator needle was introduced in three places giving exit to a considerable quantity of gas, thereby somewhat relieving pain, respiration and restlessness. On the eighth day this measure was repeated, but without relief to the enormously distended intestines. The symptoms were at this time most unpromising; pulse quick and weak, delirium, surface bluish, features pinched, and emaciation very marked. The question of opening the wound in the intestines, and allowing their contents to escape thereby, trusting to a future operation to close the sinus, had been carefully considered. In view of the facts that an artificial anus in the inguinal region gives no end of trouble in keeping the parts clean, and that it would in all probability be difficult, if not impossible, to ever close the fistula without reëstablishing the constriction, this procedure was not urged, and the parents decided, very properly as it seemed to me, not to have it done. Death from peritonitis and exhaustion took place on the ninth day after the operation.

The autopsy was made twelve hours after death. That portion of the wound situated at the junction of the two incisions in the abdominal walls had given way under the great distension on the last day of the patient's life. The rent was about two inches in extent, but there was no escape, nor even protrusion

of the intestines. There was a circumscribed peritonitis at the seat of the operation, limited to a space of four or five inches in diameter. The bowels were loosely glued together and to the abdominal walls over this area. There was no suppuration. The wound in the intestines was completely closed, although the union was not very firm. The line of incision was covered with lymph and a piece of omentum. Not a particle of fæcal matter had escaped into the peritoneal cavity. On opening the bowel above the seat of stricture, and passing in the fingers, the diameter of the intestine at that point was found to be fully an inch and a half, and yet none of the soft semi-liquid contents above had passed into the colon. The stricture had been relieved, and the normal calibre of the ileum had been restored, and yet the obstruction persisted after as before the operation. This fact was evidently due, not to constriction, but to a localized paralysis of the peristaltic action of the intestine. How much of this paralysis was due to the recent and limited effusion of lymph, and how much to the surgical lesions of the intestines, it is not easy to determine.

It is a well-established fact that adhesions sufficiently firm to interfere with peristalsis will produce as complete an obstruction of the bowels as will a contraction of their calibre. Fatal cases of strangulated hernia in which only a small portion of the intestine was involved, so little, in fact, that the capacity was very slightly diminished, have not infrequently been observed. However vigorous may be the peristaltic action, it seems to be powerless to drive the intestinal contents through a portion of paralyzed bowel, even of a very limited extent. This fact was well shown in a case of imperforate rectum lately under my care. Although the septum had been incised and was kept fully dilated with the finger, yet after a few days nothing came through, and the child died in two weeks with all the symptoms of obstruction: a distended belly, vomiting, and emaciation. At the autopsy, the rectum was found to be patent throughout, but greatly distended, and containing no fæces. It was evidently paralyzed by its lesions at the seat of obstruction. There was no peritonitis, nor other adhesions. The principal danger of a strangulated hernia is due to the arrest of peristaltic action, in other words, to the local paralysis of the vermicular action of the intestines.

In considering the case which forms the subject of this paper, the following questions may very properly be asked: first, why was not the constricted portion of the ilium cut out, and the remainder stitched to the colon? This point received due attention at the time of the operation, and was rejected for the following reasons: the parts involved were so vascular and so firmly fixed in position that the operation would have been much prolonged, much more severe, attended by very considerable hæmorrhage, and the shock and exhaustion would have been much more profound, which, in a child, is of great importance. It is very doubtful if the patient would have survived the operation. Besides no more space in the capacity of the bowel would have been obtained, nor would the intestines have been any more lax and movable upon their attachments. In short, it is not easy to see any advantages in this plan over the one adopted.

Second, why was not the colon dissected up, and freed from its attachments? Any one who will recall to mind the extensive surface by which the colon is held in its place, will readily understand the difficulties and dangers attending such an undertaking. And were this possible, the new adhesions, which must necessarily have taken place, would in all probability have been as troublesome as was the original condition.

The only other alternative, that of an artificial anus in the groin, had been disposed of before the operation was undertaken.

OPERATIONS FOR THE CURE OF INTESTINAL OBSTRUCTION.

BY HENRY O. MARCY, M.D.

Case I, 1881. Mrs. M., aged about sixty, a very stout woman of medium size. Had long been a sufferer from a large umbilical hernia, which, at times, gave great trouble and pain in reduction. When summoned, she had been three days in severe suffering, all means at reduction having failed. Vomiting, stercoraceous, and patient apparently in extremis.

Tumor nearly the size of the double fist. Skin tense and discolored. The thin sack was filled with necrosed omentum, in the centre of which was a loop of small intestine about three inches long, nearly black; it was slightly fissured on its mesenteric border. The omentum was sutured beyond the line of demarcation and cut away; the intestinal loop was returned with some misgiving as to the safety of its condition. The ring admitted the tips of two fingers only. The sack and ring were removed by an eliptical incision and closed, as after an ovariotomy. Cure ensued without complication, and patient is well to present time.

Case II, 1881. Mrs. C., aged fifty-six; under the care of Dr. White, of East Somerville. When summoned, found a large, fleshy woman, who had suffered for some days from intestinal obstruction, caused by an enormous umbilical hernia, size of fœtal head. The vomiting had been stercoraceous for thirty-six hours. The sac was sphacelated, and it was a question if operative measures were permissible. This having been determined, as the only hope, the contents of the sac, consisting of necrosed omentum and a long loop of small intestine, were exposed. The omentum was cut away, as in Case I, and seven inches of the small intestine, including a V-shaped piece of its mesentery attachment. The ends were carefully sutured with tendon used in the over-and-over stitch, care being taken, as far as possible, to include a double fold of only the peritoneal covering in each stitch. This was followed by a second row, just outside the first. Marked peristalsis supervened immediately on returning to the abdomen. The sac and ring were cut away by eliptical incision and closed, as before. Patient rallied slowly, and on the following day was comfortable. Death occurred in about sixty hours.

Autopsy showed the joined ends of the bowel encapsuled in an effusion of lymph, but no peritonitis. Death seemed incident to the prolonged suffering and exhaustion prior to operative, rather than surgical interference. Specimen, when shown to Cambridge Medical Improvement Society a little later, held water at point of juncture.

Case III, 1882. Mrs. B., colored, aged about forty. Had been well until within six months. Nursed her baby until within a few weeks. Had emaciated rapidly, and for some weeks vomited nearly all food taken.

[1] Read before the Surgical Section of the Suffolk District Medical Society, February 3, 1886.

Was seen by a number of physicians and her condition considered hopeless, as one of cancer.

When seen by me, the weakness was extreme, the emaciation marked, and through the thin abdominal wall could be easily felt a small, movable tumor. This was believed to be the thickened pylorus, and since movable, it was determined to advise exploration. Assisted by Drs. Holt and Nelson, of Cambridge, I found the stomach nearly empty; the pylorus, enlarged in a firm, hard, movable mass, size of large walnut, was without abnormal adhesion or surrounding glandular infiltration. It was determined to resect. Tied above and below with rubber ligature, packed about with sponges, for the better protection, and excised the mass with scissors. The duodenum was, by nearly half, too small to fit into the stomacic section, which was reduced to size by a V-resection of the lower border. The parts were joined as in previous cases, and the only complication was a sharp hæmorrhage from a branch of the gastro-duodenalis artery of considerable size, in the superior border of the wound. This was quickly secured, the peritoneum cleansed, and the wound closed. The patient rallied slowly, but well; was nourished by rectal enema, and the second day was bright and comfortable, gave direction as to household affairs, and was very hopeful. She sank at the end of about seventy hours from exhaustion. The autopsy showed a limited effusion of lymph; no peritonitis. The wound was well closed, and there had been no escape of the contents of the stomach into the abdomen. The other organs were healthy.

CASE IV, 1885. Mrs. B., aged about sixty. In previous good health, had all the symptoms of a sudden intestinal obstruction. When operation was made, had not had a free dejection for three weeks, and for some days, stercoraceous vomiting. The case was one of Dr. Cunningham's, of Cambridge, and it was believed that the cause might be found in some mechanical obstruction, as band or twist, since it ensued suddenly, and had persisted as complete. Aided by Drs. Cunningham and Somers, of Cambridge, I made a careful exploration. The abdomen was greatly distended, and the intestines gave much trouble in keeping within control. Used the aspirator, but failed to reduce distension of intestines, as the needles soon filled with the thin, churned-up contents. After a little examination, detected constriction near illeo-cæcal junction in a nodule of cancerous mass, size of end of finger. This easily broke under manipulation, and left nothing less than resection as the alternative. Tied with rubber ligature, and cut out the piece with scissors. The distension was so great, that it was thought wise to empty the bowel of a part of contents. Two quarts or more of liquid fæces were allowed to escape into a bowl outside the abdomen, the cavity having been protected by sponges.

The ends of the bowel were then joined as in previous cases, and the wound closed. The patient did not fully rally, and died about twelve hours after from shock. No autopsy. The operations were all conducted under thorough antiseptic precautions.

— At the Paris Société de Thérapeutique, Dr. Bouloumié lately exhibited a biliary calculus weighing 20 grammes = 5.144 drachms. It was of cylindroid shape, and measured 2 inches in length, 3¼ inches in circumference, and on section, 2 inches in its long axis.

CLOSURE OF ARTIFICIAL ANUS BY INTESTINAL SUTURE.[1]

IN THE SERVICE OF DR. C. B. PORTER.
REPORTED BY DR. W. M. CONANT.

MR. S., a carpenter, entered the Massachusetts General Hospital on the 4th of June, 1884, with an artificial anus on the right side of the abdomen.

The history is as follows:

He had had for eight years a right inguinal hernia which from time to time he had been in the habit of reducing himself, without any difficulty, until about two years ago when the hernia came down and he discovered that he could not reduce it. After trying some time without success he became alarmed and sent for a physician.

The physician, after many trials, failed to reduce the hernia by taxis and the man was put to bed. The man was kept in bed for nine days, and then was allowed to get up and have a movement and afterwards sit up for five hours. At that time he says he had a feeling as if something had broken in the region of the hernia. For several days after he was allowed to get up and use the cabinet chair whenever he wished to have a movement of the bowels. He used the chair for five days, and on the fifth day there was a rupture of the skin on the right side; and ever since there has been an opening through which his fæces pass.

He had great difficulty in keeping himself clean, and for the last eighteen months he had been confined to his room and to his bed. So great a burden had he become to himself and family that he had decided to have an operation performed even if it should prove unsuccessful.

Examination. Patient was about fifty. Frame much emaciated, but general condition was fair.

On the right side of the abdomen there was a circumscribed portion, as large as a man's palm, that was very red and much excoriated. There were three distinct openings in the skin, and the skin about them was very indurated. From these openings the fæces oozed with every breath, and on every slight impulse of any kind, as a cough or attempt to change position.

The three openings were situated somewhat as follows: —

No. 1 was just above the middle of Poupart's ligament.

No. 2 was about an inch higher up and a little to the outside.

No. 3 was about three inches higher and was four inches from the middle line of the body.

There was also a large mass of tissue in the right side of the scrotum; and the entire right side of the scrotum was enlarged and somewhat tender to the touch.

The man was put to bed: the openings were washed several times a day with carbolic acid 1–80; oakum pads were applied to catch the fæces. For a week every endeavor was made to build up the man's general condition.

On June 12th, eight days after he entered the hospital, the man was operated on.

Patient having been etherized, Dr. Porter made an incision in the line of the inguinal canal down upon the abdominal rings. This incision was about six

[1] Read before the Surgical Section of the Suffolk District Medical Society, May 6th, 1885.

inches long and began above opening No. 2 and extended through No. 1 into top of scrotum. Later this incision was extended to No. 3 and it was then found that only No. 2 opened into the abdominal cavity. After careful dissection the two ends of intestines were discovered protruding through the ring and glued to the sides of opening No. 2. These ends proved to be only the anterior portion of the intestinal wall, as, on drawing out the intestines, the posterior portion was found to be intact. The intestinal edges were freed; a portion of the intestines lifted out and placed on towels rung out in hot carbolic 1-100. The edges of the ruptured portion were refreshed and then carefully approximated and sewed with split-silk sutures. Sutures were placed very near together, not being more than a sixteenth of an inch apart.

Then the mass in the scrotum was examined and found to consist of omental tissue which had become adherent to the scrotal tissue. A portion of this mass was cut off and then was allowed to remain with the hope that it might be nourished by the surrounding tissue and so cause less disturbance than if time were taken in removing it.

After the intestines were sewed up the hernia was replaced through the ring and the ring was then stitched up.

A drainage tube was placed in most dependent part of the wound and then the wound was sewed up. A Lister dressing was applied, as during the operation full Lister precautions had been used.

Patient was taken to the ward and heaters were put about him. He came out of his ether nicely having but very little vomiting. Was given nothing but ice until evening, when he was allowed to drink a little strong French coffee, which relieved him of his ether sickness.

June 13th. Patient passed a very comfortable night and obtained considerable sleep. Had small amount of nourishment during the day, but only in liquid form consisting largely of beef tea.

June 14th. Lister changed this morning, wound in excellent condition. No sign of redness or soreness. Patient in the best of spirits and very sanguine that the operation will prove a success. This afternoon, next day after the operation, the patient passed wind.

June 15th. Lister changed. Everything looked favorable. Had movement of bowels, second day after operation.

June 16th. Lister changed. Wound has a red and angry look, but there is no temperature to indicate formation of pus.

June 17th. Lister changed. An abscess was discovered leading into the scrotum, and on being opened several ounces of foul smelling pus flowed out. This was on the fifth day after the operation. This abscess is due without doubt to the omental tissue left in the scrotum and is the cause of the increase in temperature.

June 18th, 19th. Lister changed. Abscess discharging freely. Rest of the wound healed by first intention and all stitches have been removed. Patient allowed a more nutritious diet, as boiled eggs, rare steak or chop, a little toasted bread, and an occasional egg-nog.

June 21st. Lister changed. A mass of dark, foul-smelling tissue pulled out of the scrotal abscess. This was on the ninth day after the operation.

June 22d. Lister changed. Another mass of tissue like that of yesterday withdrawn from scrotum.

June 23d. Lister omitted. Very little discharge from scrotum. Patient placed on extra diet.

July 1st. Allowed to get up and sit in a chair. This was on the nineteenth day after the operation.

July 4th. Allowed to use a wheel-chair alone.

July 8th. Patient very anxious to go home, therefore on the twenty-sixth day after the operation the man was discharged.

REPORT ON MEDICAL CHEMISTRY.

BY WILLIAM B. HILLS, M.D.

CARBONIC OXIDE.

Zaleski,[1] as a result of experiments on cats with carbonic oxide, comes to the conclusion that when the gas is injected into the peritoneal cavity it acts poisonously, though not rapidly; that it is absorbed by the blood, though more slowly than from the lungs; that it appears unaltered in great part, if not entirely, in the expired air; that it is not detectable in the expired air, if, instead of the gas itself, carbonic oxide blood has been injected. Zaleski's results are contrary to those of Kreis, who found no carbonic oxide in the expired air after the gas had been injected into the peritoneal cavity, or subcutaneously. Zaleski's experiments have an important bearing on the elimination of the gas in ordinary cases of poisoning by it, since it is disputed by many that the gas is excreted unoxidized. These allege that the unoxidized gas actually found in the pulmonary air is merely a portion of that which has never been absorbed by the lungs in ordinary inhalation experiments.

N. Grehant[2] declares, in opposition to Kreis, that in poisoning by carbonic oxide, the gas is not in any degree oxidized in the system to carbon dioxide, but is wholly eliminated unaltered.

ATROPINE.

Kratter[3] contributes a long paper on poisoning by atropine, based on a study of eight cases in his own experience. The following are his conclusions: —

(1) The detection of atropine in the body is certain, provided proper methods of analysis are employed.

(2) The urine is especially valuable for this purpose, since atropine is quickly absorbed and entirely excreted through the kidneys, apparently without undergoing change. It can be detected in the urine in cases which have not terminated fatally.

(3) The examination of the pure crystalline residue in polarized light, though not conclusive, is to be recommended, since the crystals of the sulphate are sufficiently characteristic to render the detection of atropine in this way tolerably sure.

(4) Positive proof of the presence of atropine is only to be found in its physiological action. The human eye is best of all for this purpose, since it is the most sensitive. The eye of the cat is also very sensitive.

(5) Atropine shows great resistance to putrefactive processes, and can be detected in bodies which have been buried for some months.

(6) Owing to the rapid elimination of atropine through the kidneys, the results of the chemical

[1] The London Medical Record, March 15, 1886, page 121, from Archiv. fur Exper. Pathologie und Pharmacie, xx., page 34.
[2] Comptes Rendus, 1886, page 825.
[3] Vierteljahrsschrift fur Gerichtliche Medicin, XLIV, page 52.

analysis are liable to be negative if the patient survive for some days.

Professor Flückiger[4] confirms the observation made by Mr. A. W. Gerrard in 1884, and noticed at that time in these "Reports," that the mydriatic alkaloids are possessed of quite exceptional alkaline power towards mercuric chloride, from the aqueous solution of which they precipitate mercuric oxide, the other natural alkaloids giving no precipitate at all with mercuric chloride, or, at least, in no case separating mercuric oxide.

Flückiger now makes the further observation that atropine, quite exceptionally, is able to impart a red coloration to phenolphtaleïn paper, thus contradicting the assertion made by him in 1884, that alkaloids generally were deprived of such an action. He has demonstrated that atropine is the only alkaloid (speaking, however, of the more generally used alkaloids) which displays the same action as the inorganic alkalies. This is a remarkable coincidence, and goes far to favor the suggestion that atropine must be peculiarly constituted, differing from other solid alkaloids, none of which, as far as we actually know, show the same behavior towards mercuric chloride and phenolphtaleïn. The author has also tried other coloring matters, and found them to be acted upon by atropine in the same way as by potash and soda. Atropine, therefore, has an alkaline power like the hydrates of sodium and potassium, differing in this respect from (probably all) other alkaloids. The author states, however, that mercurous chloride is not blackened by atropine as it is by the alkaline hydrates. Mr. Gerrard,[5] on the other hand, asserts that this statement is contrary to fact, and he has placed on record the experiments on which his assertion is based.

Flückiger describes modifications of the other tests for atropine. The original paper is referred to for details. It is to be borne in mind that phenolphtaleïn can be used in the identification of atropine only in the absence of the inorganic alkalies.

THE PHYSIOLOGICAL ACTION OF CERTAIN COLORING MATTERS.

P. Cazeneuve and R. Lépine[6] state that rosaniline sulphate is entirely without physiological action, even in quantities of several grammes, whether taken into the stomach or injected into the veins. Safranine, however, when injected into the veins of a dog, caused rapid acceleration and weakening of the heart's action, severe diarrhœa, and often albuminuria, ending in death. If administered through the stomach, diarrhœa was the only serious result, the irritant action of the poison probably preventing its absorption.

The authors[7] have also made experiments with three coal-tar yellows, which are used somewhat largely for coloring confectionery and beverages: namely, *Manchester*, or *Martius yellow* (dinitronaphthol yellow); *NS yellow*, a sulphonic derivative of the first color; and *solid yellow*, a sulphonic derivative of amidoazo-orthotoluene. These were administered through the alimentary canal, or were injected into the veins. Manchester yellow, even in small doses, has a somewhat poisonous action, and produces vomiting, diarrhœa, panting respiration, and a high temperature, followed by death. NS yellow has no appreciable toxic action, and solid yellow is at least as innocuous.

PHYSIOLOGICAL ACTION OF ACETOPHENONE.

Mairet and Combemale[8] have made experiments on dogs, cats, rabbits, guinea-pigs, and sane and insane human beings, the acetophenone being administered in several different ways. This substance is not a hypnotic, and its advantages as a sedative are very doubtful. It acts on the nervous system, and also produces congestive and inflammatory lesions of the kidneys, lungs, and liver.

QUANTITATIVE ESTIMATION OF ARSENIC BY THE BERZELINS–MARSH METHOD.

According to W. P. Headden and B. Sadler,[9] this method gives satisfactory results under the following conditions: The zinc must be free from carbon and pure in other respects. The arsenic must be present in the form of arsenious acid. Iron, copper, platinum or their salts, and probably the other heavy metals and their salts must be absent. The calcium chloride used for drying the gas must be neutral, and must not be used more than once. The action must be slow and regular, and the decomposition tube kept at a dull red heat. Two decomposition tubes are necessary, about three per cent. of the arsenic being deposited in the second tube.

COPPER.

Du Moulin[10] has recently studied the action of copper compounds and finds that copper sulphate may be administered to dogs and rabbits in doses of three, four and five grammes, without producing any other symptom than vomiting. Doses of one-half to one gramme of copper sub-acetate were administered daily for six weeks to dogs and rabbits without producing poisonous effects. Vomiting occurred at first, but ceased after four or five days and did not recur. Oxide and carbonate of copper were administered to rabbits during a year without causing any trouble. Compounds of copper with fatty acids gave similar results. The author has administered copper sulphate to infants in doses of twelve to fifteen centigrams without producing any symptoms of poisoning.

BORIC ACID AND BORAX.

Dr. Johnson[11] has made a number of interesting experiments relative to the elimination of boric acid and borax. The amount of boric acid administered varied between 0.90 gramme and 3.6 grammes daily; that of borax was 1.5 grammes. In one case, in which the dose was 3.6 grammes, symptoms of poisoning ensued. In the remaining experiments the only noticeable effect was occasionally an increased diuresis. The compounds of boric acid appear very quickly in the urine after their internal administration; in one case, in ten minutes after administration by the mouth. They could ordinarily be detected in the urine for eight days after the last administration; in one case for fifteen days. The acid was frequently detected in the perspiration, in one case for two days after the

[4] American Journal of Pharmacy, March, 1886, page 129, from Pharmaceutical Journal, January 16, 1886, page 601.
[5] American Journal of Pharmacy, April, 1886, page 198, from Pharmaceutical Journal, March 6, 1886, page 762.
[6] Journal of the Chemical Society, London, March, 1886, page 272, from Compt. Rend., 101, page 1011.
[7] Journal of the Chemical Society, London, March, 1886, page 273, from Compt. Rend., 101, page 1167.
[8] Journal of the Chemical Society, London, April, 1886, page 385, from Compt. Rendus, 101, page 1506.
[9] Journal of the Chemical Society, London, May, 1886, page 489, from American Chemical Journal, 7, 358.
[10] Journal de Pharmacie et de Chimie, 1886, page 189.
[11] Journal de Pharmacie et de Chimie, 1886, page 267.

last administration. The saliva gave a feeble reaction in three cases. There was great irregularity as regards the fæces. The acid appeared quickly in the urine after its application to the skin in the form of an ointment, and the reaction was obtained for two or three days after the last administration.

BISMUTH.

Steinfeld [12] contributes a long paper on the toxic effects of the salts of bismuth. The bismuth was administered in the form of soluble double citrate of bismuth and sodium, and was in every case injected into the circulation or subcutaneously. Bismuth is fairly rapidly excreted, especially through the kidneys so that after ten to fifteen hours it is not possible to detect the metal in the urine or blood though it is still present in the intestines, through which (mainly the large intestine) it is also excreted. It is not excreted by the liver or pancreas.

TIN.

Dr. Patenko,[13] of St. Petersburg contributes a paper on the toxic and physiological effects of metallic tin and the bichloride of tin. His conclusions, which are based upon twenty-one experiments on frogs, dogs and guinea-pigs, carried on in the laboratory of Prof. Vulpian, are as follows:

(1) Metallic tin has no appreciable action on the system.

(2) The bichloride of tin injected subcutaneously in small amounts produces a local anæsthesia. The salt may be wholly absorbed without producing any lesion, or may give rise to the formation of small abscesses. When larger quantities (0.100 gramme) are introduced, gangrene results at the point of injection. This tends to spread and may involve not only the skin but the subjacent organs. These effects are due solely to the caustic action of the salt.

(3) The bichloride injected into the peritoneal cavity provokes a peritonitis, which is usually circumscribed if the amount injected is small, but invariably general if the amount is large.

(4) The bichloride introduced into the bloodvessels of a dog, in doses of 0.015–0.020 gramme, produces no bad results. It is rapidly fatal in doses of 0.050 gramme. The toxic dose for a dog weighing seven kilogrammes appears to be between twenty and fifty milligrammes. After death, the membranes of the brain are found injected; the tissue of the brain moderately hyperæmic; the sinuses filled with dark liquid blood; lungs normal; left ventricle contracted, but yet containing a small amount of dark liquid blood; right ventricle dilated; liver and kidneys congested.

(5) The bichloride introduced into the stomach of a dog in doses of 0.5 gramme produces no symptom of poisoning, although it coagulates the albuminoid matters and mucus with which it comes in contact. One gramme administered daily for more than two months produced no other effect than vomiting, which occurred first on the fifth day. The vomiting occurred soon after the introduction of the tin compound, but did not continue long. The general health of the animal remained unimpaired throughout the whole experiment.

[12] The London Medical Record, March 15, 1886, page 121, from Archiv. für exp. Path. und Pharmacie, xx, page 40.
[13] Archives de Physiologie, 1886, page 33.

VOLATILE FATTY ACIDS IN URINE.

R. v. Jaksch [14] finds traces of fatty acids in normal human urine; the amount does not exceed 0.008 grammes per diem. By oxidizing normal urine, formic, acetic, and probably butyric acids are formed to the extent of 0.9 to 1.5 grammes in the daily quantity. Under certain pathological conditions, the proportion of free acid is increased, but not that obtained by oxidation. In cases of fever and liver disease, from 0.6 to 1 gramme of free acid, chiefly acetic, was found.

THE FORMATION OF HIPPURIC ACID.

H. Tappeiner [15] has made investigations the result of which shows the presence in the alimentary canal of phenyl-propionic acid (one of the putrefaction products of albumen) and increases the probability of Salkowski's suggestion, that hippuric acid in the urine may be derived in part from putrefactive changes in the alimentary canal.

PEPTONURIA.

H. Paconowski,[16] has examined the urine for peptones by Hofmeister's method in 211 cases of different diseases, with positive results in 94 cases. He divides the latter into cases of acute and chronic peptonuria. He corroborates the statements of Maixner and von Jaksch relative to the influence of suppurative processes on acute peptonuria. Earlier observers disagree with reference to peptonuria in case of ileotyphus. Maixner found peptones in the urine in this disease while von Jaksch obtained negative results in eighteen cases. The author investigated 36 cases and found peptones in 25, but only at the beginning of the period of defervescence, so that the peptonuria was indicative of beginning improvement. The result was similar in other acute infectious diseases. The author's explanation of the appearance of peptones assumes that the products of typhus processes in the intestines and mesenteric glands are reabsorbed with the occurrence of healing, while during the period of ulceration they are quickly separated from the body with the stools. The author determined the presence of chronic peptonuria in tuberculosis of the lungs. He examined the urine in twenty-five cases of this disease and found peptones in eleven, and in most of these only in the early stages of the disease when the physical signs were scarcely perceptible. The author thinks that as the destruction of the lung tissue proceeds, the vessels become less and less capable of absorbing the peptones which have their origin in the broken-down products.

The author also investigated thirteen cases of carcinoma of various organs and found peptones in the urine in ten.

[14] Journal of the Chemical Society, London, April, 1886, page 384, from Chem. Centr., 1885, page 905.
[15] Zeit. Biol. 22, page 236.
[16] Centralblatt für die Med. Wissenschaften, 1886, page 321, from Zeitschrift für Klin. Med., IX, page 429.

— The address in Medicine at the forthcoming meeting of the British Medical Association will be delivered by Dr. John S. Billings of the United States Army.

— The English hydrophobia commission is said to be retarded in its investigations by the difficulty of obtaining a rabid dog with which to test the efficacy of the protection afforded by inoculation.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION.

S. J. MIXTER, M.D., SECRETARY.

FEBRUARY 3d, 1886. The chairman, DR. GEORGE W. GAY, presiding.

DR. D. W. CHEEVER reported

A CASE OF CHRONIC OBSTRUCTION FROM CONGENITAL MALFORMATION OF THE BOWELS; TENTATIVE OPERATION; DEATH.

The child upon whom the operation was performed, was a patient of the Drs. Webber, in Cambridge, with whom he was twice seen in consultation. At birth, nothing unusual was noticed, but three or four days after, symptoms of obstruction became very marked. These symptoms were finally overcome by the use of cathartics. Recurrent attacks of a similar nature were treated in the same manner. The patient was first seen by the reader when four months old. On examination under ether the rectum and anus appeared to be perfectly normal, and no tumor of abdomen could be felt. The stools were of usual size, showing that the point of obstruction was above the sigmoid flexure. The parents at this time refused any operative interference.

After a year and a half, the patient being then nearly two years old, he was seen again. The rectum and anus were again found to be normal but the abdomen was much enlarged, the child presenting a peculiar conical appearance, the head forming the apex and the abdomen the base of the cone. He was fairly well nourished but every little while had attacks of obstruction, accompanied with vomiting and pain. An operation for the formation of an artificial anus was proposed, but refused by the parents, who, however, were willing to accept any other operative procedure and the following operation was performed under ether and with antiseptic spray. A median incision extending from the pubis to the umbilicus, exposed a large, flat, ovoid sac, occupying the lower part of the abdomen. The incision was enlarged and the tumor was lifted out. It was found to consist of a dilatation of the intestine containing about two quarts of fæcal fluid, and at one end was attached to a piece of contracted and strictured intestine, twelve to eighteen inches in length, ending at the sigmoid flexure. This was quite impervious to solid fæces.

The dilated and constricted intestine occupied such a large portion of the large intestine that excision with union of the divided ends was impossible, and an artificial anus being ruled out by the express wish of the parents, the only thing that could be done was to aspirate the sac, return it to the abdomen and sew up the incision. This was accordingly done, peritoneal surfaces being approximated, and the boy recovering well from the ether, did perfectly well for six days, when severe symptoms of obstruction presented themselves, accompanied by great swelling of the abdomen, the abdominal wound being forced apart, and death followed in thirty-six hours.

The important and peculiar points in this case are the presence of such a length of strictured intestine, undoubtedly congenital, and the size of the tumor formed by the dilated intestine above the stricture. The reader had never before seen a case where the abdominal wound, apparently healing by first intention, had been forced open by intestinal distension.

DR. C. B. PORTER exhibited a patient upon whom he had performed an operation for the closure of an artificial anus following sloughing hernia. The case was reported by Dr. W. M. Conant [1] before the Surgical Section, May 6th, 1885.

DR. PORTER said that in this case the pillars of the ring were united with catgut and a radical cure of the hernia obtained. This was the second successful case that he had had. In a third case where a fæcal fistula had resulted from a crush of the abdomen by a cart wheel, it was found impossible to lift out the intestine on account of adhesions, and the patient had died eighteen hours after the operation.

DR. H. I. BOWDITCH recalled to mind many cases in his past practice, where the lives of the patients might have been saved or made endurable by the methods of modern intestinal surgery. Cases of non-malignant stricture of the intestinal tract, obstruction by gall stones, and many other diseases of the abdominal organs, should no longer be regarded as incurable.

DR. GEORGE W. GAY reported a case of

STRICTURE OF THE ILIUM; LAPAROTOMY; DEATH ON THE NINTH DAY; AUTOPSY.[2]

DR. CHEEVER emphasized the fact that in cases of chronic obstruction, the intestine above the constriction becomes much dilated and its muscular coats paralyzed, thereby greatly increasing the difficulty of operating and the danger of a fatal result.

DR. PORTER said that the case reported by Dr. Gay interested him particularly, as in his first case the portion of intestine excised had been at the ileo-cæcal valva, the site of the stricture in the case reported by Dr. Gay.

DR. HENRY O. MARCY reported four cases operated on by him for

INTESTINAL OBSTRUCTION.[3]

DR. MARCY exhibited frozen sections through the tumor of the pylorus, (CASE III) mounted in balsam as stereopticon slides. These showed the complete occlusion of the canal. He expressed his belief that had the operation been performed earlier, the outcome, very probably, would have been different, since the case was a very favorable one for operation. Dr. Marcy strongly advocated the use of the tendon suture, prepared after Mr. Lister's formula, from the tail of the Kangaroo in the over and over stitch. It is reliable, non-irritating, holds the enclosed parts more firmly and evenly, and has the great advantage of saving time in the rapidity of application, while it requires but a single knot in the entire circuit of the bowel. The second row may not be necessary, but it gives a further protection, and requires but a very few minutes in its application.

DR. J. W. CHADWICK reported a case of

INTESTINAL RESECTION FOR MALIGNANT STRICTURE OF THE LARGE INTESTINE.

In this case there had been symptoms of obstruction for six months, and the slight hæmorrhage for three months. The right side of the abdomen was some-

[1] See page 80 of this Journal.
[2] See page 77 of this number of the Journal.
[3] See page 79 of this Journal.

what fuller than the left. An incision was made to the right of the rectus, and a prolonged search was necessary before the obstruction was found. It was at last discovered in the large intestine about three inches above the ilio-cæcal valve, well up under the liver. The constricted portion, about three inches in length, was excised, and the dilated upper end united to the lower contracted one. Great difficulty was experienced in introducing the stitches according to the rule of Lembert, as the dilated portion was very thin, and in both ends the coats of the intestine were very movable one on the other. Death from shock took place in twelve hours.

Time seems to enter as a very important factor in these operations, and familiarity with the methods of operating will probably bring the best results.

THE AMERICAN OTOLOGICAL SOCIETY.

The nineteenth annual meeting of the American Otological Society was held at the Pequot House, New London, Connecticut, July 20, 1886.

The Society was called to order by the President, Dr. J. S. Prout, of Brooklyn.

A business committee consisting of Drs. Webster, Holt and St. John was appointed.

Dr. Friedenburg and Dr. Bartolett were invited to take part in the proceedings of the society.

The treasurer then made his report stating that there was a balance of $51.82 in the treasury.

Dr. S. Sexton, of New York, read the first paper, entitled

ACUTE AND CHRONIC PURULENT INFLAMMATION OF THE MIDDLE EAR TRACT AND THEIR COMPLICATIONS.

The paper was based on a study of over two thousand cases of acute purulent inflammation of the middle ear, acute catarrhal inflammation of the middle ear, and chronic purulent inflammation. Acute catarrhal inflammation was included in the consideration of acute purulent inflammation, since in the beginning, the conditions were probably the same although not always going on to suppuration. Of this number there were twelve deaths.

The speaker held that in no disease of man is a knowledge of regional anatomy more important than in diseases of the middle ear and gave a *résumé* of the anatomy of the temporal bone, accepting the description of Professor Leidy as the most satisfactory.

The temporal bone at birth is peculiar in the fact that the tympanum and mastoid antrum are about as large as they ever become in adult life. The petroso-squamosal suture is imperfectly closed.

The symptoms were next referred to. Brain symptoms such as headache, vertigo, pain, delirium, nausea and vomiting may occur in consequence of middle ear disease without lesion of the cerebral structure.

The prognosis of purulent inflammation of the middle ear is favorable when non-meddlesome treatment is adopted, both as regards life and the preservation of hearing. Out of twenty thousand cases of ear disease, where the patient has been seen at the beginning of the attack, no fatal case has occurred. Cases which have come under observation after severe symptoms have appeared, have given twelve deaths. Some of the fatal cases occurred long after the ear trouble had abated.

In regard to treatment, the speaker recommended incision of the drum head. Trephining of the mastoid process has been recommended by some authorities. Dr. Sexton took up a consideration of the indications which have been regarded as calling for the application of the trephine and held that they were insufficient. From his experience, he was led to believe that drainage could be best maintained through the natural channel.

The speaker also described

A NEW OPERATION FOR THE RADICAL CURE OF CHRONIC PURULENT INFLAMMATION OF THE MIDDLE EAR TRACT.

Since describing a form of chronic purulent inflammation of the attic in a paper read before the society last year, it had occurred to him that something might be done with these cases by means of an operation. It seems especially desirable to cure these cases, when the ear remains simply a reservoir for purulent matter, liable at all times to infect the system. It is found that in the greater number of these cases that the remaining portion of the conducting mechanism no longer serves to aid in the transmission of sound but acts rather as an obstruction to drainage. Where the membrana flaccida and a portion of the ossicular chain only remain, the former often becomes thickened and everted, forming with the altered mucous membrane a pouch for the retention of putrescent matters which may slowly escape. Where granulation tissue or polypoid growths are present in the attic or antrum the escape of secretions is still further interfered with. This produces long continued and great irritation.

The author had observed that in a number of cases where the transmitting mechanism had been lost, a spontaneous cure followed, and it occurred to him that the curative action of nature might be imitated with advantage. Where drainage from the attic and antrum is interrupted, a cure can only be assured by an operation permanently clearing the passage outward from the tympanum.

Last year the operation was tried on a long-standing case of otorrhœa, due to chronic purulent inflammation of the attic. In order to avoid the danger of using an ordinary lamp in connection with the administration of ether, an electric light was used. The operation has since then been fully performed in several cases.

The first step of the procedure is to separate the membrana flaccida from the edge of the auditory plate and to remove any portion of the membrana vibrans adherent to the auditory ring. If the malleus and incus remain in situ, it is well to divide the tendon of the tensor tympani muscle when present, where it leaves the handle just behind the short process and below the chorda tympani. The chorda tympani when remaining is then divided where it enters the tympanum at the pyramid and also at its exit into the canal of Hugier. The long process of the malleus, being also received into the glenoid fissure by means of this short oblique canal, along the chorda, may be more or less detached at the same time. The detached tissues and ossicles should now be removed with the forceps. It will frequently be found that the incus having been displaced, still remains. It may be removed with the attic scraper, which is to be introduced from below

and passed up along the inner wall of the tympanum, when the distal extremity may be carried over the incus or malleus, if the latter bone remains, and by traction the ossicles can be detached; polypoid masses, granulation tissue and the products of inflammation may now be removed with the cutting curette or cutting forceps, and the parts dressed with a four per cent. solution of cocaine to relieve pain.

There is usually free bleeding during the operation, often sufficient to protract it and increase its difficulties.

The effect of injury or destruction of the chorda tympani nearly always manifests itself in some way, but had never in his experience been a matter of serious import. Disturbances of taste sometimes follow the operation, but they gradually disappear and leave the sense of taste unaffected.

The drum should be kept well cleansed and light dressings of boracic acid applied until healing takes place. The salicylic acid powder may be applied as freely as can be borne. In some cases this is irritating at first, but tolerance is soon established. It may then be kept up until the parts cease to discharge.

In the cure resulting from this treatment, a dermic transformation of the tympanum takes place, but mucus may occasionally gain admission from the Eustachian tube during recurrent head catarrh or on blowing the nose. This should be frequently removed with cotton wool, and if necessary the drying applications renewed for a time.

Where the incuso-stapedial connection remains, I should not hesitate to perform this operation, unless a very considerable portion of the membrana vibrans was present.

The instruments employed and some of the diseased ossicles removed, were exhibited.

DISCUSSION.

DR. C. R. AGNEW, of New York. I infer from the speaker's remarks that he objects to the opening of the mastoid.

DR. S. SEXTON, of New York. I have never had any difficulty in obtaining drainage in cases of periostitis externa by a free incision with a small tenotomy knife.

DR. AGNEW. Where the inflammation has come to involve the mastoid cells, I think that some portion of the external wall of the mastoid should be removed. The objection to the trephine is that it does not expose a sufficient area of the cancellated tissue of the mastoid. I do not see how the new operation, which has been described, will be of service in these cases.

DR. SEXTON. The new operation I recommended only in chronic cases.

DR. H. KNAPP, of New York. The upper tympanic pneumatic cells resemble, to a certain degree, the frontal sinuses. These have a direct natural drainage through the infundibulum into the nose. When this is closed by disease, the lateral part of the sinus over the orbit dilates, and the cavity is more easily reached and more effective drainage is obtained by opening the sinus from the orbit. In a like manner, we obtain, in most cases, easier and more effective drainage of the supra-tympanic cells by opening the mastoid cells with which they communicate.

PAINLESS, AND ONLY SLIGHTLY PAINFUL ULCERATION OF THE MEMBRANA TYMPANI, PROBABLY OF A TUBERCULAR NATURE,

by DR. A. H. BUCK, of New York.

The speaker stated that the recognition of the early stages of tubercular disease was important, and the object of the paper was to call attention to the features by which this could be recognized. Three cases had been seen by the author. The patients were in a condition of fair general health; one of them had suffered with back-ache for months, and its significance, disease of the vertebræ, was recognized only a short time before the patient came under the speaker's observation. There was no evidence of pulmonary disease in either of the three cases. Tinnitus and slight impairment of hearing were the first symptoms noticed.

In two of the cases, which were examined at an early period, there was slight redness and swelling at the upper part of the membrana tympani, and of the skin covering the bony wall. In a short time, the infiltration extended into the entire posterior superior quadrant. The membrane became bulging, and at the most prominent point a perforation established itself.

Following this, the disease followed a somewhat different course in the different cases. In one the redness spread, and other portions of the membrane became involved. In the case where spinal disease coexisted, the upper posterior portion of the canal became more congested, as though the bone were the seat of the disease. In the last case there was gradual improvement. The hearing was slightly impaired. In the other two cases, discharge became profuse. In one case, sudden hæmorrhage from the lungs occurred.

In the incipient stage, the distinguishing features are the tendency to localization in the upper posterior portion of the membrana tympani, the marked insignificance of the pain, or even its entire absence, and the intolerance to all but the simplest local measures.

The author read a communication from DR. CLARENCE J. BLAKE, of Boston, describing similar cases.

DR. SEXTON. I have seen many of these cases of catarrhal inflammation of the middle ear in phthisical subjects. The tendency of the structures of the ear to break down in advanced phthisis is very great.

DR. E. GREUNING, of New York. I have seen a number of cases, in which I was led to infer that the ulceration of the drum-head was due to tuberculosis. I distinctly recall three cases. In one case, that of a young man, only one ear was affected. The opening was in the inferior posterior quadrant of the drum-head. There was very little purulent discharge. There were two openings, showing that this was not the result of perforation from accumulation. It appeared to be a melting-down process. In another case there were multiple openings, so that the membrane appeared to be honey-combed. These, also, were in the membrana tympani proper. These cases improved under treatment, but the openings remained.

DR. C. R. AGNEW. I have seen a number of cases, in which I supposed that the origin was tuberculosis. In a considerable number of these cases, the main lesion has been in the drum-head, below the extremity of the handle of the malleus. I recall the case of a young man, who had trouble at the apex of both lungs when he came under observation. He stated that a short time previous, he had begun to have slight ringing and a sense of dulness in the ear; that this had gone on for two or three days; and then, when blowing his nose, he found that he whistled through his ear. In the ear complained of I found an opening, looking as though it had been removed by a punch.

The opening was eliptical. Within a few days, the same thing occurred in the other ear.

Dr. J. A. Andrews, of New York. In regard to the presence of the bacillus in middle-ear trouble occurring with phthisis, although I have examined a large number of cases, and some with a great deal of care, I have never found the bacillus.

Dr. A. H. Buck. I have not looked for the bacillus, but even if they are not found, tuberculosis should not be excluded, for their chances to escape detection are too numerous. I have seen cases like those described by Dr. Greuning, but I have not seen them in the early stages, and have, therefore, not considered them in my paper, as there is a possibility that they were due to previous ear disease.

Dr. J. Orne Green, of Boston. I have been much interested in this paper, and I recognize several characteristics which I apply to tuberculosis. Where I find this destruction coming on without pain and without discharge, I at once suspect a tubercular diathesis, and I generally find a history of it. I also agree with the speaker that only the very mildest measures can be used. Strong applications make the trouble worse.

Twice, in cases of advanced tuberculosis, I have seen, on examining the drum membrane, little white, glistening points about the size of a pin-head, not secreting at all, and in one case, with no congestion. In both cases, the spots disappeared in a few days, and within twenty-four hours there was a little clean, punched-out opening in the drum membrane. This occurred without any discharge. It seemed to me that I was dealing with isolated tubercles in the tissue of the drum membrane. One of these cases died a few months later from the general disease.

Certain Technical Details Relating to Operations on the Mastoid Process,

by A. H. Buck, M.D., of New York.

The speaker first referred to the objections which had been made to the drill. It has been stated that there is danger of plunging the drill into the lateral sinus, or even into the brain. He had, however, found no tendency for the drill to go astray. It had been said that the opening made was too small, but any sized drill might be made. He used a drill one-fourth of an inch in diameter until the antrum was reached, and finished the operation with a smaller drill. This gives a sufficient opening for drainage. Where there is a large sequestrum, it is necessary to make a larger opening.

After the use of the drill, pyæmia and septic fever is rare. With a knowledge of the part to be operated upon, the drill may be used with perfect safety. It can be guided perfectly by resting the fingers on the bone. The conical shape of the drill also enables the operator to tell when its point has entered a cavity.

The objections to the use of the chisel were next taken up. When this is used, the wound in the adjacent soft parts must be larger, and the opening in the bone is more extensive, leading to a depressed cicatrix. More time is required in the operation, and it is not free from danger. These objections are, however, trifling, if the results of the operation are found to be more satisfactory than those following the use of the drill. A study of the statistics of both methods seems to show that there is nothing to warrant the statement that chisels and gouges are to be greatly preferred to drills in establishing opening into the mastoid process.

In operating with the drill, after making the opening, I cut out a little canal for the escape of the discharges, for the opening made by the drill is covered by the flap when it comes into position. For the first four or five days after the operation, the wound is irrigated once a day with a bi-chloride solution, one to two thousand.

In reply to a question, Dr. Buck said that is his earlier operations, he applied the drill a short distance in front of the vertical line. His present plan is different. A straight vertical incision three inches long is made. By this means he exposes the mastoid process where it curves into the meatus. The drill is then applied to the first flat surface. The only difficulty is in establishing the final communication between the canal and the antrum.

Dr. J. Orne Green. In my practice I have used the drill almost entirely. I prefer to make a small opening at first and I am then guided by what I find. Some cases require a large opening, and in such cases the gouge and chisel will come into play. In the majority of cases a small opening is sufficient.

In some of these cases the use of the dental engine is very applicable. I have a modification of the engine which may be screwed to a table; it is turned by a handle, and any one can furnish the power. No skill is required, as in the engine worked with the treadle. Used in this way, I have found the engine of great service. The burrs can be used with the greatest delicacy. In the cases which I have operated on, I have put in a drainage tube and kept it in as long as possible. In the after-treatment I have used a solution of carbolic acid, one to eighty. Of late years I have applied an antiseptic gauze dressing and kept that on.

Dr. H. Knapp, of New York. I wish to make some remarks in favor of the chisel. In my first operations I used a drill, but I have abandoned it. With the chisel you can at every step observe the condition of the tissue which you are cutting. With the chisel you have a perfectly smooth surface, rendering it easier to cleanse the wound. It is also very easy to manage the chisel. The principle reason in favor of it is, however, that it enables each step of the operation to be seen.

Dr. H. D. Noyes, of New York. There is much less danger in the use of the chisel than of the drill. There is often great differences in the anatomical relations of the parts. The lateral sinus is not always found in the same place. With the drill, there is danger of perforating the walls of the sinus or of some important vein. With the chisel or the gouge, you explore the part, layer by layer, and ascertain how the parts are situated. This is a strong argument in favor of this instrument.

Dr. J. A. Andrews, of New York. In my operations, I have always used the chisel, but have always begun with the drill. I believe that the chisel is the best instrument and can be used with more caution than the drill. I always make a large opening, for I believe that a collection of pus should always be given free vent. Instead of the ordinary drainage tube I use a small rubber gutter to keep away the soft parts.

Dr. E. Greuning, of New York. I have opened the mastoid process seventy-seven times. At first I used the drill, and in acute cases the results were all that could be desired. The drill was, however, not applicable to all cases and I have since used the chisel. A small opening may be made with the chisel. What

can be done with the drill can be done with the chisel.

DR. A. H. BUCK, of New York. From the direction which the discussion has taken, it might appear that I am in antagonism with the chisel. I am not in antagonism with the chisel in those cases where a large portion of bone is to be removed. I leave those out of consideration in my paper. Where a large mass is to be removed it cannot be removed with the drill. The two instruments cannot come into conflict.

A communication with reference to the organization of a congress of American physicians and surgeons, was presented and referred to a committee consisting of Dr. C. R. Agnew, Dr. H. Knapp, and Dr. John Green to consider and report at the evening session.

The morning session was then adjourned.

EVENING SESSION.

FATAL TERMINATION OF A CASE OF SCLEROSING MASTOIDITIS AFTER CHISELING OF THE BONE.

by H. KNAPP, M.D., of New York.

A man, aged fifty, had extensive suppuration in both ears after scarlet fever in childhood. The right ear became totally deaf and the left, very hard of hearing, became deaf (hearing reduced to a quantitative perception of sound) by a recent attack of dizziness. Dr. Knapp found both tympanic membranes absent, the cavities sclerosed in both, pale in the right but congested in the left ear. Behind the left ear was found a cavity fully an inch deep, lined with immovable skin, the result of former exfoliation of bone. Three weeks later facial paralysis on the left side occurred. It disappeared in two weeks, under steaming and large doses of iodide of potassium. Two weeks later the patient suffered with constant intense headache and nausea. The mastoid was opened to the depth of half an inch by chiseling. The bone was compact and in the depth very vascular. During the first two days the patient was sleepy; could not be roused on the third, and died comatose on the fifth. No autopsy was allowed.

Death was due to traumatic meningitis. In regard to opening the bone in sclerosing mastoiditis: the prognosis is good when the sclerosis is the result of catarrhal or plastic inflammation, but bad when it was the consequence of old caries or necrosis. There are cases on the border line, and even when the prognosis was bad, the indications might be strong. The operation will rescue a certain number of the otherwise fatal cases.

A CASE OF ABSCESS OF THE MASTOID CELLS WHERE THE CHIEF INDICATION FOR OPERATION WAS ELEVATION OF TEMPERATURE,

by O. D. POMEROY, M.D., of New York.

A. S., age twenty years, fairly robust, had a violent attack of otitis of the right ear, which came on January 30, 1886. The following morning there was free discharge. February 1st, he entered the hospital, when a large perforation was found: a poultice and warm douches was ordered. By February 4th, the membrane looked almost normal. There was some pain in the occiput and a temperature of 103.6°. Ten grains of quinine with twenty grains of iodide of potassium, to be repeated in three hours, was ordered. This was followed by a reduction of two degrees in the temperature. The following day the temperature again went up, and it was apparent that a purulent process was going on. There was no swelling over the mastoid, and the pain was no greater than might be expected from a neuralgic condition.

After consultation it was decided to open the mastoid process. A drill was introduced and from four to six drops of pus evacuated. After the operation the patient continued to improve until he was discharged cured.

DISCUSSION.

DR. J. A. LIPPINCOTT, of Pittsburgh. In connection with Dr. Knapp's case, I should like to report a recent case in which an operation in a similar case resulted in failure. Something over two years ago I operated in a case of sclerosing mastoiditis, which had been suffering intense pain for twelve months, and which did not yield to alterative and tonic treatment. After the operation the patient remained well for thirteen months. The pain then returned and continued in spite of all treatment. Last March a second operation was performed, and a larger opening with the drill made. No benefit was produced.

DR. H. KNAPP. I should like to state that the cases which I have reported where benefit followed chiseling open a sclerosed mastoid, have remained well.

TWO CASES OF CHRONIC PURULENT INFLAMMATION OF THE ATTIC OF THE TYMPANUM WITH PERFORATION OF THE MEMBRANA FLACCIDA TREATED WITH PER-OXIDE OF HYDROGEN,

by CHARLES H. BURNETT, M.D., of Philadelphia.

In the first case no application had had the same good effect as the peroxide of hydrogen. Every other medicament had seemed to irritate rather than heal the inflammed mucous membrane. In the second case, the discharge, which had been very chronic, was promptly checked by the use of the peroxide of hydrogen.

The chemical formula of this drug is H_2O_2, and by its affinity for albuminous matters, especially those of pus, it seeks every particle of this matter in a cavity like the middle ear and thoroughly cleanses the parts. The union with pus is shown by a copious foam, which boils out of the external ear. When the foaming ceases and the peroxide returns clear, the diseased cavity has been thoroughly cleansed. In many cases this seems sufficient to effect a cure. Where there is a perforation in the membrana flaccida, the application is made by means of the tympanic syringe, the long and slender nozzle of which is introduced through the perforation at the attic of the tympanum. The peroxide is used undiluted.

IN THE PHYSIOLOGY OF HEARING IS THERE AN OVERLAPPING OF EACH AUDITORY FIELD THE SAME AS IN BIOCCULAR VISION,

by WILLIAM S. LITTLE, M.D., of Philadelphia.

Cases of one-sided deafness afford the opportunity of mapping out the auditory field for one ear and it is found with the watch at two feet from the ear the tick can be heard about ten or fifteen degrees across the median line of the head. This gives more scope to hear sounds produced on the side of the head opposite the good ear. The tuning fork is not heard even up to the median line on the side of the ear tested. The watch has been used in making the observations. If the field of one ear reaches beyond the median line to

about ten degrees, we have when both ears are normal an over-lapping of each field to the extent of fully ten degrees on either side of the median line in front, above and behind the head. Each ear hears sounds in this area of twenty degrees. Outside of this area, each ear hears singly. By means of this, there is no need to turn each ear towards the source of sounds which reach the individual: the direction of sound is best found in this way for safety in walking and maintaining the erect position. Sudden loss of hearing on one side puts the sufferer to great annoyance, as the ability to determine the direction of sounds is in a measure, lost, the patient often looking in the wrong place when called. It is fully as perplexing, if not more so, than in a case of sudden loss of sight in one eye, making seeing dependent on one organ of vision.

The attempt to restore hearing should be directed not only to obtain hearing in a line directly in front of the ear, but also to increase the area of hearing in the affected ear or both affected ears, till it reaches, if possible, the coalescence seen in normal ears.

A PAPER ON TWO CASES OF EAR DISEASE DUE TO TRAUMATISM,

by Dr. Gorham Bacon, of New York, was read by title.

The society then went into executive session.

The proposition with reference to the organization of a Congress of American Physicians and Surgeons was discussed, and a committee of conference was appointed, consisting of Drs. C. R. Agnew, of New York, H. Knapp, of New York, John Green, of St. Louis, W. H. Carmalt, of New Haven, and George Strawbridge, of Philadelphia.

The officers for the ensuing year are as follows:— President, Dr. J. S. Prout, of Brooklyn; vice-president, Dr. Samuel Sexton, of New York; secretary and treasurer, Dr. J. J. B. Vermyne, of New Bedford, Mass.; committee on membership, Drs. Gorham Bacon, W. S. Little, and E. W. Bartlett.

The following were elected to membership;— Dr. J. B. Emerson, of New York; Dr. J. O. Tansley, of New York; Dr. J. L. Minor, of New York; Dr. Henry L. Morse, of Boston; Dr. Huntington Richards, of New York; and Dr. T. Y. Sutphen, of Newark, N. J.

The society then adjourned.

THE AMERICAN OPHTHALMOLOGICAL SOCIETY.

The Twenty-Second Annual Meeting of the Society was held at the Pequot House, New London, Conn., July 21st and 22d, 1886.

The meeting was called to order by the President, Dr. William F. Norris, of Philadelphia.

A communication with reference to the organization of a Congress of American Physicians and Surgeons was read and referred to a committee consisting of Drs. C. R. Agnew, Charles S. Bull, and B. E. Fryer, for consideration with instructions to report at the present session.

Dr. Peters, of New York, Dr. D. Hubbel, of Buffalo, Dr. E. Friedenberg, of New York, Dr. Carvelle, of Manchester, and Dr. Cutter, of New York, were invited to take part in the proceedings of the Society.

The first paper read was entitled:

PYOGENIC MICRO-ORGANISMS, WITH DEMONSTRATIONS AND EXPERIMENTS,

by Dr. H. Knapp, M.D., of New York.

Dr. Knapp made some general remarks with reference to the dependence of suppuration on certain kinds of micro-organisms, the pyogenic bacteria, of which pure cultures have been obtained during the past two years. He exhibited these bacteria in numerous test-tube specimens on agar-agar, and also under the microscope. He also exhibited slides of different tissues of the eyes that had been infected with these germs. He showed two rabbits which he had operated on for cataract, the day before, in the presence of members of the Society. Extraction had been made on the left eyes with clean instruments, and on the right eyes with instruments contaminated with staphylococcus pyogenus aureus. The left eyes were free from secretion. The wound of one eye in a doubtful, the other in a good condition, whereas the right eyes discharged matter profusely and were in a state of intense destructive inflammation. He then operated on two other rabbits in the same way. The four rabbits were examined the next day. The eyes were examined with much interest by the members. The right eyes in all were suppurating; the wounds of the left eyes in three of the rabbits were in good condition. In one of the first two rabbits, it was suppurating. This eye had become infected from the right eye of the other rabbit. They had been kept in the same box and the operator had found them with their heads in contact.

These demonstrations were made to draw the attention of the members to this new and important field of inquiry, and the speaker would be happy to furnish cultures of these organisms to any one who intended to make investigations in this department.

In reply to a question as to the best method of cleaning instruments, Dr. Knapp said that in the institutions in Europe the instruments are placed in an antiseptic solution. This, however, has the disadvantage of dulling the edge of cutting instruments. His experiments had shown him that simple washing with water in the case of smooth instruments, followed by friction with a clean towel renders them bacteriologically clean. Where an instrument has a groove or is at all rough, it is much more difficult to clean. Instruments, like forceps, may be put in the antiseptic solution. It must be remembered that in the majority of our operations a certain quantity of infecting material is required to produce any effect. Where there is a free escape of liquid from the wound the material is washed off, but where there is a sucking-in process the danger of infection is much greater.

Dr. B. E. Fryer, of Kansas City. There is one antiseptic which has lately come into use which would probably not interfere with the edge of cutting instruments. That is hydro-napthol. It has, however, not been sufficiently long under observation to enable us to say whether or not it will completely sterilize instruments. It has also occurred to me that chloroform would probably perfectly sterilize instruments.

Dr. Hubbel, of Buffalo. I would ask Dr. Knapp if there are not certain conditions of the eye which would favor infection of the wound after operation. I recently operated in a case of cataract in a man sixty years of age, where there had been a long standing

purulent inflammation of both conjunctivæ. I performed an iridectomy following it in two weeks with extraction. Both operations were entirely successful and without accident, notwithstanding the fact that there was a constant purulent discharge. The only antiseptic used was a solution of boracic acid.

DR. H. KNAPP. I think that a lachrymal discharge with a certain amount of conjunctivitis furnishes a favorable soil for the growth of bacteria. In operating in such cases, the discharge should be completely removed. As I said before, a certain quantity of the pathogenic bacteria are required to produce infection. I have pricked the cornea to one-third or two-thirds its depth and covered the wound with an emulsion of the bacteria. In only one out of every four or five cases did abscess develop.

DR. J. A. ANDREWS, of New York. I have frequently pricked the cornea and applied the staphylococcus pyogenus aureus and have repeatedly seen recovery follow without suppuration or inflammation. Mere contact with the microbe with the wound is not always sufficient to produces suppuration, especially in the case of the cornea where the discharge is liable to be washed off. Where the material has been introduced into the wound and kept there for a short time, I have never seen a failure.

In the cleaning of instruments, I use what I term an aseptic fluid. I procure clean water and boil it for some time. This I use for the washing of instruments. The principal value of antiseptic solutions in hospitals is I think because they furnish something you are sure is clean. The water is not always clean. I do not mean to be understood as saying that I use boiling water. I simply boil the water to render it aseptic.

AN ANALYSIS OF ONE HUNDRED CASES OF EXUDATIVE RETINITIS OCCURRING IN THE COURSE OF BRIGHT'S DISEASE.

by DR. C. S. BULL, of New York.

Only such cases were included in the report as had been examined by the writer personally and had been followed to their termination. All cases due to scarlatina or pregnancy were excluded. Out of five hundred cases examined only one hundred and three fulfilled these conditions. The ophthalmoscopic examinations were made by the author, and the urine was always examined. In fifty-four of the cases, both eyes were affected when the patient came under observation, and in ninety-three per cent., both eyes were ultimately involved. Hæmorrhages occurred in sixty-nine cases. In thirty-four cases, there were no hæmorrhages. The hæmorrhages were intimately connected with disease of the bloodvessels. Only one instance of color affection was observed.

The prognosis with reference to the duration of life is very unfavorable. The one hundred and three cases reported, were collected during a period of thirteen years. Of this number eighty-six have died, fifty-seven during the first year and twelve during the second. Seventeen were still living, but fourteen of these were seen for the first time within the last six months. One of these cases, however, was seen for the first time seven years ago.

A rather unusual complication was seen in four of the cases; that was the presence of sugar, as well as albumen, in the urine. The amount of sugar was variable.

DR. E. GREUNING, of New York. I have collected over one hundred cases of this affection, and I find that none of my cases have lived over two years after the diagnosis of retinitis albuminurica has been made out. In this class of cases, I have included only those in which the typical stellate changes were seen in the maculæ of both eyes. I have lately seen this appearance in the macula of one eye in a patient who presents no evidence of Bright's disease. This is the first time that I have seen this exquisite change without signs of renal disease.

DR. B. E. FRYER, of Kansas City. In these cases, albumen is occasionally absent from the urine for a short time. In two such cases I have found albuminose during the time that albumen was wanting.

DR. DAVID WEBSTER, of New York. I am satisfied that, in rare instances, these patients do recover their general health and may live indefinitely. Some years ago I examined the eyes of a clergyman, and found the typical appearances of retinitis brightii. He had been examined fifteen years previously by a competent observer, who found the same condition, and also found albumen and casts in the urine. I had the urine examined, and found a slight trace of albumen.

DR. O. F. WADSWORTH, of Boston. Where the retinitis albuminurica comes on during, or immediately after pregnancy, I have seen the stellate spots in the maculæ entirely disappear. I have also seen typical stellate deposits in cerebral tumor, and in what was supposed to be meningitis, but in which there was no albuminuria.

DR. E. GREUNING, of New York. The cases of retinitis brightii which we see in our offices differ very materially from those which we see in hospitals. The patients who consult the oculist are usually those with the small, contracted kidney, while the patients with the large white kidney find their way to the hospital.

DR. C. S. BULL, of New York. I wish merely to repeat what I said in my paper, that I exclude all cases where the albuminuric retinitis was due to scarlet fever or to pregnancy. I do not mean to say that the so-called stellate exudation in the region of the maculæ is typical of Bright's disease. I have seen it in intracranial tumor, and in cases supposed to be meningitis. Retinal exudation other than stellate I have seen not infrequently in cases of large white kidney.

(To be continued.)

— The Library of the Society for the Advancement of Medical Science at Tokio, Japan, has just been presented with 64 volumes of the Boston Medical and Surgical Journal, being from 1848 to 1879 inclusive, bound in half calf.

— A correspondent writes us that he has lately witnessed the triumph of linseed oil in the treatment of pruritus ani where all the classical remedies had failed. In the case of two patients who had been for several years sufferers from pruritus ani with a trifling erythematous eruption and no rectal complications that could be discovered, the free external use of linseed oil at bed time about the parts gave immediate relief, and thus far free inunction with this simple remedy has given complete exemption from the nocturnal annoyance.

Medical and Surgical Journal.

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THE DOCTOR AS PATIENT.

THE study of medicine, and personal devotion to the alleviation of suffering, does not insure the doctor against the ills common to all mankind; nor does an intimate acquaintance with the vagaries of the sick enable a physician to pass through his own trials with equanimity. In fact, the doctor is far from appearing at his best in the *rôle* of patient; he feels as much out of place on a sick bed as would a general officer if he were reduced to the ranks. He has been so long accustomed to command, that he finds it very hard to obey, at least, without some sort of a protest.

During his student days he was led astray by his imagination, which made him suffer from the ills of which he studied. He probably, at that time, convinced himself of the ease with which one exaggerates his own sensations, and learned to disregard his own feelings for the most part. Only in such a way as this can we account for the neglect in himself of those beginnings of disease which a layman would suppose would infallibly arrest a doctor's attention, as they certainly would in a second person: as it is, he usually disregards his early symptoms and goes about with a temperature higher than that of the patient whom he sends inexorably to bed. He hopes for the best in his own case, as in others, but he fails to prepare for the worst, as he advises his patients to do, for he uses up, by continuing his work, the strength he ought to reserve to carry him through the sickness, it needs no angel sent from heaven to foretell. Once fairly prostrate, it is usually the alarmed relatives who summon the doctor, rather than the patient himself.

And it is no light task for the brother physician who presides over his sick bed to care for the prostrate individual, who insists on discussing the method of treatment, and with a disordered imagination and weakened intellect, desires to sit in judgment on the conduct of his own case. The patient is apt to be sceptical as to the powers of the drug on which his friend and adviser relies. He suspects his friend of a want of candor in his bedside talk. The little talks outside his door, the ruses of his wife to gain a little private conversation with the doctor, excite his anger. He listens for the noise of the wheels after his friend has left the room and if the sound of his chariot is too long delayed he feels sure that the long suffering man is delaying at the door to tell what he "really thinks," and he takes pains to interrupt the conversation by some abrupt message; perhaps, if it happens to be evening, by saying that it is time to close the house for the night.

But if he is critical and somewhat sceptical, he learns to know his physicians by their steps, and even the roll of their carriages on the street; and no patient gives them a more cordial welcome, or parts with them more reluctantly. He feels sure that his memory of their kind attentions certainly must be longer than that of certain patients who, according to the familiar lines, whose truth is too often confirmed by experience, forget even the doctor's face when they have recovered.

He seldom escapes making himself disagreeable to his nurses. It is hard to convince him that it is his own fault that his food does not taste as it ought. He is indignant that his own kitchen cannot produce broth as good as that of his neighbor's; but the tales of his own peevishness, when he hears them after recovery, he can but believe are grossly exaggerated.

Nothing is more surprising to the doctor, when reduced to the position of patient, than to find that he himself is subject to like weaknesses as other members of the human family. The nervousness, for which, in others, he has had too little sympathy, shows itself in a thousand ways. The little noises impossible to avoid disturb him, and the children of his household seem most unruly. Most strange of all, and most humiliating in his remembrance afterwards, he even calls his doctor for nothing. He wakes from sleep, sure he is going to have a chill, or some equally unpleasant manifestation, and when, with grave face and careful attention, his hastily summoned physician has felt his pulse, taken his temperature, and sought for the signs of any possible complication, to inform him at the end that there is nothing to justify his fears, he admires, and is grateful for the patience that has borne with his apprehensions, but he feels great curiosity to know what his doctor says to himself as he goes home to resume his broken sleep; and most of all, he wonders at himself and mutters, "is thy servant a dog, that he should have needlessly disturbed a doctor's sleep?"

But especially trying to an invalid doctor, is a tedious convalescence. His knowledge of the possible complications and sequelæ gives a wide field of possibilities, over which his imagination wanders uncontrolled, and he is fortunate if he does not become a hypochondriac. He is pretty apt to partake of the lay fondness for talking about the unusual features his case has shown. If he thinks about the matter at all, he finds how difficult it is to know at what length to detail his symptoms to inquiring friends. Unless he keeps his tongue in due subjection, he is apt to realize that few men are really good listeners, and his kind

friends, when they are released from his story, may be excused if they say, "poor fellow, he needs bracing up." But really, there is some excuse for him if he is a little garrulous; personal experience of pain is different from looking on, but interested as he is in his own closer acquaintance with disease, his account of it differs little, in the ears of his medical brethren, from the story they have often heard before.

But a little personal experience of the sick bed teaches the doctor many things. He certainly learns that a sick man does not look upon things as a well man does, and his charity towards an invalid's whims is greatly increased. He cannot fail, too, to be touched and softened by the many kind inquiries and pleasant messages that come to him. Busy men come and sit down beside him as though the dearest object of their hearts was to see him recover; men who justly plead bodily infirmity as an excuse against the slightest exertion climb his stairs to express their sympathy, and patients who have seemed thankless and forgetful show that they needed only the opportunity to show their gratitude. And when the sick man resumes his place in life, he is pretty sure to have not merely an increased enjoyment in living, and a better idea of his fellowmen, but also a higher estimate of the value of his own profession.

A LIST OF THE PUBLICATIONS OF HARVARD UNIVERSITY AND ITS OFFICERS, WITH THE CHIEF PUBLICATIONS OF THE UNIVERSITY, 1880–1885.

THE Bibliographical Contributions, just issued from the library of Harvard University, and edited by Justin Winsor, the librarian, includes the publications of the University, and its officers for the period from September 30, 1880, to September 30, 1885. The titles are grouped under the head of publications relating to the University and afterwards under the names of the different authors, alphabetically arranged, and these lists, of course, include the literary work of the instructors of the Harvard Medical School.

It is often said that Boston physicians write very little; certainly the number of books whose authors claim residence in Boston is not very large. Perhaps that is because their knowledge of books is sufficient to show them how rare are absolutely new ideas. Let the reason be what it may, they have the reputation of writing somewhat less than the medical population of some other cities. It is, then, something of a surprise to see how large a number of titles in the Harvard Bibliography is comprised in the contributions of the physicians who make up the faculty of the Harvard Medical School.

The first title of medical interest is the "New Century and the new Building of the Harvard Medical School," which contains the address of Dr. Holmes, and the remarks of the other gentlemen who took part in the exercises of the dedication. Dr. Holmes figures again more distinctly, on a later page of the collection, as the author of various works, not always strictly medical in character, but which are known to have something of a medical flavor, and which are carefully studied by the profession, not only in this, but in other lands, as any one may assure himself by reading the story of the poet's present wanderings.

The modern lithotritie frequently appears, not alone because the author's own name graces the list, but, as it would in any similar catalogue, because the subject has given rise to quite an extensive literature of its own. The subject is the basis of a title by nearly all the surgical instructors.

In the matter of clinical reports, the Bibliography shows an abundance of contributions, which often hide, under very modest titles, the results of careful observation. The number of contributions to encyclopædias and the amount of editorial work is also very large, and one who looks upon the encyclopædic articles as mere hack-work would greatly misjudge them: many of them are the result of personal experience rather than mere scholar's digests made in the library.

The number of articles representing work done in the physiological laboratory shows the encouragement to original research which is presented in that department. When one remembers the few years that such a laboratory has been adequately furnished, the results are exceedingly gratifying.

The object of this "List of Publications" we suppose to be two-fold, to show what has been done by the Faculty, and to stimulate the number of contributions in the future. The medical portion certainly contains some remarkable, and a large number of extremely creditable articles, but an attentive study will show that in many of the medical departments the literary production might be stimulated without great danger of forcing an over-growth.

THE SUCCESSFUL LEAP FROM THE BROOKLYN BRIDGE.

HANGING is said to have been considered by President Lincoln the worst use to which a man could be put: it is, perhaps, an open question whether a man subserves a better purpose who contributes to our knowledge of the results to the human frame of falls from great heights. If he kills himself in attempting to demonstrate his belief that he can safely jump from the Brooklyn Bridge he serves to point a moral, but if he succeeds, as the individual has done whose exploit has been so recently a subject of newspaper gossip, it is more difficult to know how to regard him. The JOURNAL has reason, however, to be grateful to the "hero of the fourth ward." A year ago, in commenting upon the fatal attempt of the late "Professor" Odlum, it ventured to say that "if they (the Sam Patchs and Odlums) could have struck the water squarely, feet foremost, they would doubtless not have been killed." "Steve" Brodie by *dropping* from the lowest wire instead of leaping from the rail succeeded in striking the water in that manner; and in fulfilling the necessary conditions, showed the truth of the JOURNAL's conclusions by surviving the fall.

The time of three seconds is stated to have been consumed in the transit: whether this statement is derived from accurate observation at the time, or from an abstract mathematical calculation we cannot say, but information seems to be reliable that the fallen body is in the receipt of one hundred dollars a week from an enterprising Dime Museum.

MEDICAL NOTES.

— An International Congress of Climatology and Hydrology is arranged to commence on October 1st, at Biarritz. A list of excursions into the Pyrenees and adjacent parts, which have been organized for the benefit of the members of the Congress, and which are spread out over the month of October, reaches upwards of thirty in number. Membership, the fee for which is fixed at 10s., confers the right to travel on the French railways at a reduction of fifty per cent., and entitles the member to join all or any of these excursions.

— The *Sanitarian* relates a case in which a rat had died under the floor of a large drawing-room, and was giving great offence to the owner of the house, who had had the carpets and furniture removed preparatory to taking up the floor. An ingenious friend drops in, suggests that the doors and windows be shut, steps out to the stables and traps a couple of blue-bottle flies, and returning, sets them free in the apartment. The flies, after a little undetermined buzzing, settled pertinaciously on a certain crack in the floor, and on the removal of one plank at this point, the cause of offence was readily removed.

— A case is reported from Port Elizabeth, South Africa, in which a man, while bathing had his leg completely bitten off by a shark; he was rescued, and, after immediate amputation above the condyles, recovered. On examination of the amputated stump there were distinct marks of the serrated edge of the shark's teeth on the outer condyle of the femur, two-thirds of which had been, as it were, sawn through; the monster must have caught the leg obliquely, crushed through the condyle and wrenched the leg off, going obliquely across the joint. There were also three wounds of the skin on the same side just below the rim of the pelvis, where the shark first caught his victim.

— Anything with a spice of horror in it has an attraction as a newspaper item. The following appears among the items of a daily paper:—

"A novel industry, to which a large manufactory in the suburbs of Paris is devoted, is that of preparing skeletons for the market. The proprietor contracts for a supply of corpses from all the dissecting-rooms and hospitals in the city, and the raw material is sent to him by the wagon load, to be dumped upon its arrival into huge cauldrons, in which it is boiled for days. When the contents of one of these cauldrons are sufficiently cooked, the grease is skimmed off, to be subsequently sold, and the soup having been poured away, the human fragments are laid upon a table, where the adhering tissues are carefully removed by the "bone peelers," as they are called. The bones are then bleached in the sun, and ultimately pass into the finishing room, where they are assorted and converted into articulated skeletons. To choose from the miscellaneous collection bones wherewith a skeleton may be constructed, which will pass for that of a single individual, requires no small amount of ingenuity. A female skeleton is worth several francs more than that of a male.

"The disarticulation of the skulls is performed separately, as it is a branch requiring greater skill and nicety in its manipulation. It is effected on the skulls of young adults or children by the ingenious plan of filling the emptied cranial cavity with dried peas, which are then steeped in water, and, in swelling, compel the disjunction more delicately than could be done in any other way. In some of the vats the bodies of infants only are boiled, and in the show-rooms of the establishment the skeletons of children are beautifully arranged in a graduated scale from minus four months up to three years. Other cauldrons are used for the bodies of animals, whose skeletons are valuable to the students of natural history. These are sold in great numbers to schools and colleges. The preparation of frogs, lizards and various reptiles occupies a separate department. The comparative cheapness and abundance of the skeleton supply from Vienna since the Russo-Turkish war has somewhat depressed the trade, but really good osteological preparations always command a high price."

NEW YORK.

— In a suit brought by the Society for the Prevention of Cruelty to Animals, of Jersey City, against Dr. Beriah A. Watson, a surgeon of eminence of that place, to recover damages for alleged cruelty to dogs in experimental surgery, Justice Lane gave judgment July 20th, against Dr. Watson, and an appeal is to be taken to the Court of Common Pleas.

— At a meeting of the Board of Managers of the St. John's Riverside Hospital, at Yonkers, held July 19th, the resignation of the visiting medical and surgical staff, which were recently tendered because of the failure of the board to appoint Dr. Edgar M. Hermace, a consulting physician, were accepted; while at the same time resolutions were adopted acknowledging the faithful service of the staff, and expressing the regret of the managers at their resignation. The resolutions also asserted that the reason for the failure to appoint Dr. Hermace was the fact that he had been ungentlemanly in his treatment of the Ladies' Committee and of the Board of Managers.

— Dr. Alfred S. Purdy, one of the oldest and most highly esteemed practitioners of the city, died of pneumonia on the 22d of July, at his residence, No. 308 Madison Avenue. He was born in New York in 1808, and commenced the study of medicine in the office of Dr. Alexander H. Stevens, a noted surgeon of the day. He was graduated from the College of Phy-

sicians and Surgeons in 1834, and continued in active practise in his native city for fifty-five years. His funeral, which occurred July 24th, was attended by delegations from the New York Academy of Medicine, the Medical Society of the County of New York, and the New York Pathological Society, of which societies he had been a member for many years. The services were held at St. Paul Methodist Episcopal Church, of which he was one of the founders, as well as a trustee, at the time of his death.

— In Troy there would seem to be an admirable opportunity for the enforcement of the existing statutes against the illegal practice of medicine. A certain Mrs. Hoyt, of that city, some time ago obtained a diploma from an institution known as the "American Health College," of Cincinnati, claiming, it is said, to be incorporated under the laws of Ohio, which authorizes her to practice the "vitapathic system of medicine," whatever that may be. She states that she was graduated from the college after an attendance of *eight weeks* upon its course of study, and that she also has a certificate from the institution authorizing her to perform the functions of a minister of the Gospel. Acting upon the powers conferred by the latter, it is asserted that she has already officiated at two marriages; but to what extent she has inflicted the "vitapathic system of medicine" upon the community has not transpired.

Miscellany.

MEDICO-LEGAL CASE — ALBINO BIRTH — IS IT WHITE OR BLACK?

READERS of the JOURNAL who read "Mr. and Mrs Morton" cannot fail to find interest in the following letter which originally appeared in the *Virginia Medical Monthly.*

MR. EDITOR,— At a recent term of the Corporation Court of this city, a case involving legal medicine occurred of sufficient interest to justify a short account of it.

William H. Brothers and Sarah E. Brothers, both negroes, were married some years ago and are the parents of two children, a boy and a girl. On November 4th, 1883, after many quarrels, they parted, and in April, 1884, Sarah E. Brothers obtained a decree of absolute divorce against her husband, Wm. H. Brothers, and the chancellor gave to her, the plaintiff, the custody of the children, and imposed upon her the care of their property, consisting of some city real estate.

On August 6th, 1884, nine months and two days after last opportunity of access, Sarah Brothers was delivered of a white child. Becoming aware of this fact, Wm. H. Brothers entered a petition before the court to have his two children removed from the custody of their mother and their property remanded to other care, alleging that the fact that her child was white was sufficient proof that he, a negro, was not the father of the child, and therefore proof of the adultery of the mother. She resisted the petition, declaring that the child was the offspring of the petitioner and an albino. After the case had been in court many months, the chancellor declined to decide the parentage of the child, and a jury was called to determine "Whether W. H. Brothers is the father of the child of Sarah E. Brothers, born on August 6th, 1884."

On the trial the child was produced in court; opportunity of access was proven as late as the 4th of the November preceding, the motherhood was proved, and I was called upon to testify as to the race.

I found a child of skin as white as pearl — glistening, smooth and very thin — hair woolly but perfectly white, eyes light gray with pinkish pupils, oscillating continually, nose flat and thoroughly African, head heavily developed behind, low forehead, rather rounded, lips thin. I had therefore no hesitation in declaring the child to be an Albino. Then came the question is it a negro or mulatto albino? I concluded that the "kinky" wool and flat nose were sufficiently marked to demand the opinion that it was not a mulatto; but what was I to do with those thin lips? At last I concluded that the thinness of lip was probably due to the atavism or the reversion to strain, and that possibly there was a trace of white blood somewhere in one or other of the parents. The mother was pointed out to me, and I thought that I could see that she was not a full-blooded negro. The two undoubted children of the contestants were now presented in court, and I was pleased to find both of them the possessors of thin lips. Wm. H. Brothers was shown to me, and I found he had the same sort of lips, and undoubtedly had white blood in his veins. I had seen the child before, but never any other member of the family. I pointed out each feature to the jury and discussed it before them, and called their attention to the lips as the only feature which prevented me from asserting that the child was a full-blooded negro, and then pointed to the lips of the other members of the family.

After argument, the jury retired and soon returned with the verdict, "We the jury, find that W. H. Brothers is the father of the child of Sarah E. Brothers, born on August 6th, 1884."

WM. A. THOM, JR., M.D.

NORFOLK, VA., May 31st, 1886.

HYDROPHOBIA AND PASTEUR. TWO OPPOSING STATEMENTS.

The first is practically the substance of a special despatch to an enterprising daily:—

"Henry Bergh, the man who prevents cruelty to animals in New York and vicinity, is taking an interest in the case of the young man Harold Newell, the son of a Jersey City doctor, upon whom Dr. Valentine Mott has been 'experimenting, after the Pasteur fashion, to cure him of a dog bite.' He said to a reporter to-day that 'Dr. Mott and the rest of them ought to be arrested. He is probably acquainted with Pasteur's financial success, and is making this an experiment advertisement for future operations. The whole principle of inoculation is wrong. The medical profession fears to express its honest convictions because of the popular belief in vaccination. The human race is deteriorating under vaccination. Smallpox, cancers, tumors, syphilis and other forms of disease are resulting from it. There are no end of fanatics who

find microbes for every disease. They will be finding one for delirium tremens before long. There is no proof that Pasteur has ever cured a patient of hydrophobia, for there is no proof that he has ever had a hydrophobia patient. He has bulldosed his countrymen, the government has subsidized him, and the people take what he gives them. He has insulted common sense. What healing power is there in veal broth injected into the blood? Can anything be more absurd than this taking virus from a diseased sore and putting it into the veins of a healthy person?'

"The experiments on young Newell were temporarily suspended because it was feared they were giving him hydrophobia, instead of curing him of it."

The second is the account from an honored medical contemporary of a lecture in which M. Grancher, the collaborator of M. Pasteur, presented, for the first time, the clinical history of the patients treated for hydrophobia by vaccination. The persons bitten and vaccinated were grouped in three classes:—

"(1) Those bitten by a dog of which the nervous system was sent to Pasteur's laboratory, inoculated in rabbits, and caused death of the latter by hydrophobia; or those who had been bitten by a dog the bite of which had caused death by hydrophobia in other animals or man.

"(2) Those bitten by a dog which before or after death had been examined and declared rabid by a veterinarian.

"(3) Those bitten by a mad dog which had escaped observation.

"The statistics extend to April 22, 1886.

"The total of the three categories includes 1,335 patients. Elaborate and rigorous statistics prepared by M. Leblanc, Member of the Academy of Medicine and Veterinarian to the city of Paris, show that of 100 non-vaccinated persons bitten by rabid animals, 16 die.

"In the first group above mentioned there were 96 patients, of which 1 died, a mortality of 1.04 per cent.

"In the second series are 644 subjects and 3 deaths, a mortality of 0.46 per cent., or for the two series, of 0.75 per cent.

"In the third series are 232 cases, which are here disregarded.

"The mortality among patients bitten on exposed surfaces (the face and hands), was in the first group 54, with 1 death, mortality 1.8 per cent.; in the second group, 400 with 3 deaths, mortality 0.75 per cent. M. Brouardel, in examining the statistics of the Council of Hygiene from 1862 to 1872, finds that in non-vaccinated persons bitten on exposed surfaces, the mortality is 80 per cent.

"In addition, M. Pasteur has vaccinated 48 persons bitten by mad wolves; of these 7 have died, giving a mortality of 14 per cent. M. Brouardel has shown that non-vaccinated individuals similarly bitten present a mortality of 66.5 per cent.

REPORTED MORTALITY FOR THE WEEK ENDING JULY 17, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Whoop'g Cough.	Diph. and Croup.
New York	1,439,039	892	533	34.11	7.56	27.36	1.08	3.07
Philadelphia	971,363	—	—	—	—	—	—	—
Brooklyn	690,000	394	239	59.02	8.00	35.88	1.04	5.20
Chicago	630,000	—	—	—	—	—	—	—
Boston	380,406	181	89	28.05	12.65	24.20	.55	4.95
St. Louis	400,000	166	75	31.80	4.20	16.20	.60	7.20
Baltimore	417,220	212	125	36.66	9.40	31.49	.47	1.41
Cincinnati	325,000	126	72	34.76	9.48	20.54	—	6.32
New Orleans,	238,000	—	—	—	—	—	—	—
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	113	52	29.58	7.83	20.80	—	.87
Pittsburgh	190,000	105	65	29.45	5.70	17.10	2.85	2.85
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	61	24	31.16	14.76	29.52	—	6.06
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	33	15	45.45	12.12	24.24	—	—
Charleston	60,145	42	23	14.00	16.80	19.20	—	—
Worcester	68,383	25	18	36.00	8.00	28.00	4.00	—
Lowell	64,051	33	15	39.39	6.06	36.36	—	—
Cambridge	59,660	28	15	35.00	17.85	28.56	—	—
Fall River	56,863	25	18	52.00	8.00	48.00	—	—
Lynn	45,861	17	0	11.76	5.88	5.88	5.88	—
Lawrence	38,825	—	—	—	—	—	—	—
Springfield	37,577	—	—	—	—	—	—	—
New Bedford	33,393	9	4	11.11	—	11.11	—	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	10	5	10.00	20.00	10.00	—	—
Holyoke	27,894	14	9	50.00	14.24	71.20	7.14	—
Chelsea	25,709	—	—	—	—	—	—	—
Taunton	23,674	4	0	—	—	—	—	—
Haverhill	21,795	—	—	—	—	—	—	—
Gloucester	21,713	3	2	—	—	—	—	—
Brockton	20,783	6	4	—	—	—	—	—
Newton	19,759	4	1	—	50.00	—	—	—
Malden	16,407	4	2	50.00	—	—	25.00	25.00
Fitchburg	15,375	7	2	14.28	—	—	—	14.28
Waltham	14,609	2	1	100.0	—	—	—	50.00
Newburyport	13,716	4	1	—	—	—	—	—
Northampton	12,896	—	—	—	—	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,510: under five years of age 1,379; principal afections diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 925, consumption 235, lung diseases 158, diarrhœal diseases 720, diphtheria and croup 85, whooping-cough 27, scarlet fever 24, measles 20, typhoid fever 19, malarial fever 17, cerebro-spinal meningitis 14, puerperal fever two. From scarlet fever, St. Louis six, New York and Pittsburgh five each, Cincinnati three, Cambridge, Brooklyn, District of Columbia and Waltham one each. From measles, New York nine, Baltimore four, Cincinnati three, Brooklyn, Pittsburgh, Nashville and Worcester one each. From typhoid fever, District of Columbia five, New York and Cincinnati four each, St. Louis and Nashville two each, Baltimore and Pittsburgh one each. From malarial fever, St. Louis five, New York four, Brooklyn, Baltimore and Nashville two each. From cerebro-spinal meningitis, New York eight, District of Columbia and Nashville two each, Fall River and Holyoke one each. From puerperal fever, Brooklyn and Boston, one each.

In the 20 cities and greater towns of Massachusetts, with a population of 956,052 (population of the State 1,941,465), the total death-rate for the week was 21.27 against 18.76 and 18.02 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,033,817, for the week ending July 10th the death-rate was 18.4. Deaths reported 3,213: infants under one year of age 907: diarrhœa 225, measles 116, whooping-cough 58, scarlet fever 33, fever 27, diphtheria 18.

The death-rates ranged from 25.2 in Preston to 11.7 in Wolverhampton; Birmingham 15.0; Hull 15.3; Leeds 19.5; Leicester 14.6; Liverpool 18.2; London 19.4; Manchester 20.1; Nottingham 18.5; Sheffield 15.1; Sunderland 13.1.

In Edinburgh 20.5; Glasgow 18.9; Dublin 23.1.

For the week ending July 10th, in the Swiss towns, there were 29 deaths from consumption, lung diseases 23, diarrhœal diseases 10, measles five, diphtheria and croup three, puerperal fever two, small-pox and erysipelas each one.

The death-rates were: at Zurich 9.9; Geneva 17.2; Basle 11.8; Berne 21.4.

The meteorological record for week ending July 17, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, July 17, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, 11	29.774	70.2	82.7	60.2	78.0	31.0	54.0	54.3	S.W.	W.	N.E.	10	16	12	C.	C.	C.	—	—
Monday, 12	29.889	67.6	78.7	54.5	55.0	31.0	66.0	50.7	N.	N.W.	W.	8	12	12	C.	C.	C.	—	—
Tuesday, 13	29.998	67.1	77.1	56.8	63.0	64.0	76.0	67.7	N.W.	S.E.	S.W.	4	11	6	C.	F.	C.	—	—
Wednes., 14	30.040	63.8	66.6	62.5	79.0	93.0	89.0	87.0	S.E.	E.	E.	12	20	13	C.	O.	O.	—	—
Thursday, 15	29.922	70.6	79.1	62.3	100.0	74.0	93.0	88.7	E.	S.W.	S.W.	12	15	12	R.	O.	O.	—	—
Friday, 16	29.907	71.7	77.0	69.6	88.0	85.0	93.0	88.7	S.	S.W.	S.	12	8	6	R.	R.	O.	—	—
Saturday, 17	29.892	73.0	84.1	68.8	84.0	71.0	89.0	81.3	S.W.	S.E.	W.	6	6	9	O.	F.	F.	.9	1.25
Mean, the Week.	29.917	69.1	75.0	62.1				74.1											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 17, 1886, TO JULY 23, 1886.

PERIN, GLOVER, assistant surgeon general and colonel. Leave of absence extended one month. S. O. 165, A. G. O., July 19, 1886.

GARDNER, WM. H., major and surgeon. Granted four months leave of absence, to take effect August 10th, or as soon thereafter as his services can be spared. S.O. 165, A. G. O., July 19, 1886.

DE WITT, CALVIN, major and surgeon. Assigned to duty at Fort Sully, Dak. S. O. 66, Department of Dakota, July 14, 1886.

BARNETT, RICHARDS, captain and assistant surgeon. Leave of absence extended six months on surgeon's certificate of disability. S. O. 156, A. G. O., July 15, 1886.

KANE, J. J., captain and assistant surgeon. Ordered from Fort Ringgold, Tex., to Fort Hancock, Tex. S. O. 85, Department of Texas, July 13, 1886.

CARTER, WM. F., captain and assistant surgeon. Ordered from Fort Concho, Tex., to Fort Ringgold, Tex. S. O. 85, Department of Texas, July 13, 1886.

DICKSON, JNO. M., captain and assistant surgeon. Ordered from Alestrag Island, Cal., to Fort Mason, Cal.

COCHRAN, JNO. J., captain and assistant surgeon. Ordered from Fort Mason, Cal., to Presidio of San Francisco.

GIBSON, R. J., captain and assistant surgeon. Ordered from Fort Winfield Scott, Cal., to Alestrag Island, Cal., on return from leave of absence. S. O. 56, Department of California, July 8, 1886.

OWEN, WM O., JR., first lieutenant and assistant surgeon. Ordered for duty at Fort Schuyler, New York Harbor. S. O. 84, Division of the Atlantic, July 15, 1886.

BOOKS AND PAMPHLETS RECEIVED.

On Some Forms of Paralysis from Peripheral Neuritis; of Gouty, Alcoholic, Diphtheritic, and Other Origin. The Harveian Lectures for 1885. By Thomas Buzzard, M.D., London., Fellow of the Royal College of Physicians in London; Fellow of King's College, London; Physician to the National Hospital for the Paralysed and Epileptic. London: J. & A. Churchill. 1886.

Annual Announcement of the School of Pharmacy of the University of Michigan, for the Nineteenth Year, 1886-87, with a Register of the Residences and Occupations of the Alumni.

An Accidental Divulsion of a Pterygium Leading to an Improvement in the Regular Operation. By A. E. Prince, M.D., Jacksonville, Ill. (Reprinted from the Archives of Ophthalmology, Vol. xiv., No. 1, 1885.)

A Summary of Work done in Pa. Oral School for Deaf Mutes, Scranton, Penn. A Paper written for the Eleventh Convention of American Instructors of the Deaf, held at California Institution for the Deaf, Berkeley, California, from July 15 to July —, 1886. By Emma Garrett, Scranton, Penn.

The Hygiene of the Vocal Organs. A Practical Handbook for Singers and Speakers. By Morell Mackenzie, M.D., London, Consulting Physician to the Hospital for Diseases of the Throat; Formerly Physician and Lecturer on Physiology at the London Hospital; Physician to the Royal Society of Musicians. London: Macmillan & Co. 1886.

The Treatment of White Swelling of the Knee. By A. B. Judson, M.D., Orthopædic Surgeon to the Out-Patient Department of the New York Hospital. (Reprinted from the New York Medical Journal for June 5, 1886.)

Permanent Drainage for Ascites. By Llwellyn Eliot, M.D., Washington, D.C. (Reprinted from the New York Medical Journal for June 26, 1886.)

A System of Practical Medicine. By American Authors. Edited by William Pepper, M.D., etc. Vol. V. Diseases of the Nervous System. Philadelphia: Lea Brothers & Co. 1886.

The Genuine Works of Hippocrates. Translated from the Greek, with a preliminary Discourse and Annotations. By Francis Adams, LL. D. Vol. II. New York: William Wood & Co. 1886.

Diseases of Digestive, Urinary, and Generative Organs. Illustrated by 105 fine wood engravings. Being Volume II. of the Handbook of Practical Medicine. By Dr. Hermann Eichhorst, Professor of Special Pathology and Therapeutics and Director of the University Medical Clinic in Zurich. This is Vol. VI. of Wood's Library for 1886. New York: William Wood & Co.

Relations of the State and the Medical Profession. An Address Delivered before the Alumni Association of the Department of Medicine and Surgery of the University of Michigan. By Charles J. Lundy, M.D. Reprint.

Lecture.

ON COMPLETE ALIMENTS AND ON THE MILK DIET.[1]

A CLINICAL LECTURE ON HYGIENIC THERAPEUTICS.

BY PROF. DUJARDIN-BEAUMETZ, M.D., PARIS, FRANCE.

GENTLEMEN: — My last lecture was concerned with the primordial alimentary principles (albumen, fibrin, sugar, salts, etc.) No one of these *per se* can suffice for sustenance, and it is only in a state of combination that they constitute food. The number of alimentary substances that contain these proximate principles associated in the proper proportion to subserve all the necessities of nutrition, is, as you know, very limited, in fact, milk and eggs are almost the only complete aliments. With regard to ordinary foods, the alimentary principles are unequally distributed through them, and it is only by combining foods of various kinds that we have a dietary capable of meeting all the wants of the economy. Hence the division of foods which I have before given you into complete and complex aliments.

Milk has to-day an important therapeutic *rôle*; it is in fact a food medicine which renders us great service in a large number of diseases. I shall therefore devote this lecture to the consideration of milk diet, concluding with a few words about eggs and their employment in alimentary hygiene.

Milk is the type of complete aliments, containing in its composition (the gelatinous substances alone being excepted), all the primordial principles in large proportion. The albumen and casein represent the albuminoid principles; the butter represents the fats; the sugar of milk the carbo-hydrates, and the whey contains the water and salts which stand for the inorganic principles; two alkaloids have also been found in milk, if we may trust the experiments of Winter-Blyth; galactine and lacto-chrome. But these researches have not been confirmed, and we may say the same of those still later investigations, whereby casein has been shown to have a multiple albuminoid composition, (Hammesten, Radenhausen, etc.)

The table which I here place before you shows you the *average* composition of the milk of the human female, the ass, the cow, and the goat. (Henri Fery.)

Milk in 1000 Parts.	Woman.	Ass.	Cow.	Goat.
Density. . . .	1033.50	1032.10	1033.40	1033.85
Water	9009.10	9149.00	9109.08	8698.52
Dry Extract . .	133.40	118.10	125.32	164.34
Butter	43.43	20.10	34.00	60.00
Sugar	76.14	69.30	52.16	48.56
Casein	10.52	12.30	28.12	44.27
Salts	2.14	4.50	6.00	9.10

By glancing over the above table it will be seen that if the density varies but little, oscillating between 1032 and 1033, and if the proportion of water remains about the same in the several kinds, being expressed by a mean of 900 grammes, it is not so with the other principles of milk and particularly with the butter, lactose and casein.

If the milk of the human female and that of the ass resemble each other in the quantity of casein which they each contain, they differ very much in this respect from that of the cow and the goat which contain twice and three times as much, (28.12 for cow's milk, 44.27 for goat's milk). As for the sugar, the ratio is the reverse, this principle existing in less quantity in the milk of the cow and goat, as the table shows. As for the butter, it is the goat's milk which takes the precedence, while that of the ass contains the least.

The Municipal Laboratory of Paris, which has rendered such great service in the prosecution of frauds and sophistications of milk in this city, has established the following mean for cow's milk, below which the milk is considered bad.

One hundred parts of milk ought to yield the following substances in the following proportions:

Water		87.00
Extract (by heat maintained at 95°) . .		13.00
Ashes	.60	
Butter	4.00	
Lactose	5.00	
Casein	3.40	
		100.00

Chief importance in this analysis should be assigned to the figure of the extract, which should not be under 13 per cent. This is the proportion found by Carter Bell in England and Dr. S. W. Abbott, of Boston, (see especially the excellent report of the latter on the Milks of Massachusetts, published the present year).

But the above estimate must be considered only as a fair average, and milk, from whatever source, will present numerous variations, according to the age of the animal, the state of fatigue or repose, according to the time the milk has remained in the udder, frequency of milking, etc. But the food of the animal or nursing woman has the principal influence on the composition of this liquid, and this leads me to speak of medicinal milks.

Medicines may in fact be eliminated in the milk, and during the past few years important researches have been made which concern this very point: I will call your attention more particularly to those of Thomas Dolan,[2] of Pauli, and Lewald,[3] of Kehler, of Lazansky, of Fehling,[4] of Max Stumpf, etc.

It has been proved that medicinal and toxic substances derived from plants pass out in great part in the milk. It is well known that the solanum alkaloids may render the milk toxic to the infant. As for mineral substances, a great number are excreted in the milk. Thus the milk may become impregnated with iodine and iodide of potassium by giving these medicinal agents to nursing women. It is so also with salicylic acid, and it is known to be dangerous to give very large therapeutic doses of arsenic to wet-nurses; Brouardel and Pouchet, in fact, report a case where it appears that the death of the infant was the result of such administration. Although Keller has maintained that mercury is not eliminated by the milk, except when given in poisonous doses, all experimenters are of opinion that the mercurial preparations when taken in therapeutic doses by nursing women may pass out in the milk, and that syphilitic infants may in this way be treated.

There is the same general agreement with regard to quinine. Instances have been cited of nurslings being cured of malarial fevers by quinine given to the wet-nurse and passing out in the milk. As for alcohol, it is never eliminated by the mammary gland, but it gives rise to milk of bad quality. This question has been often discussed in connection with the subject of the feeding of cows on the malt refuse of breweries.

[1] Printed from advanced sheets.

[2] Practitioner, 1881.
[3] Berlin, 1879, Lombardy, 1875.
[4] Journal of Obstetrics, 1875.

If milks may thus become medicinal or toxic by the fact of the administration of medicaments, they may also become the factors in the genesis of certain diseases by being the carriers of the germs of those diseases, and it has been claimed that in this way typhoid fever, tuberculosis and even syphilis may be transmitted. As far as syphilis is concerned, the experiments of Padova and Gallois have shown the perfect innocuousness of the milk of syphilitic wet-nurses, and if this disease is transmitted to the nursling, it is not by the milk that it is communicated but by mucous patches on the lips or nipples of the wet-nurse.

If typhoid fever has ever been propagated by milk, it was by the water fraudulently added to the milk by the vendor that the *materies morbi* was transmitted. It is known that the sources of drinking water are often contaminated by typhoid fever dejecta (as in the case of proximity of walls to cesspools), and dishonest milkmen have on some occasions adulterated their milk with such water, thus spreading the disease.

Moreover, there is no doubt that Koch's tubercle bacillus may penetrate the mammary secretion in tuberculous females, or cows affected with bovine phthisis; such milk has been proved capable of communicating tuberculosis when inoculated in animals susceptible to the disease (like hares).[5] Other animals as dogs, are incapable of being in this way rendered tuberculous. Most men show a similar resistance to the virulent principle; moreover, when milk containing the bacilli are taken into the healthy stomach, these micro-organisms are likely to be destroyed by the gastric juice.

It is also notorious that none are more exposed to emanations from tuberculous persons than physicians, who are often for hours in an atmosphere abounding in dried sputum particles, and if they resist the contagion, it is because their organisms are an unsuitable culture medium for the bacilli. As you see I do not believe much in the dangers supposed to arise from tuberculous milk, and there is at any rate an easy way of rendering such milk innocuous, namely, by boiling it.

Milk undergoes fermentation through the influence of a special organism, the *oidium lactis* or *bacterium termo*, the lactose being transformed into lactic acid, as the following formula shows:

$$\underset{\text{Sugar of milk.}}{C_{12}H_{24}O_{12}} = 4\underset{\text{Lactic acid.}}{(C_3H_6O_3)}$$

The lactic acid when formed causes the precipitation of the casein and the milk separates into two parts, the whey and the solid matters. Whey is very much employed in medicine, and you will see in Switzerland and in the Austrian Tyrol and other parts of Europe numerous stations where the "whey cure" is carried out.

Whey is composed principally of the salts, sugar, and a certain quantity of casein and of butter which has escaped precipitation. The following analysis from Valentiner gives you the composition of whey:

	Sheep.	Cows.	Goats.
Water	91.960	63.264	91.380
Albuminoid matters (albumen and casein)	2.130	1.080	1.140
Sugar of milk	5.070	5.100	4.530
Fatty matters	0.252	0.116	0.372
Salts and extractives	0.588	0.440	0.578
	100.00	100.00	100.00

The patients drink a small tumblerful, morning and evening, increasing the quantity until ten or twelve a day are taken. During the whey treatment they are compelled to submit to a rigorous dietetic regimen, which consists principally in abstinence from meat and in the use of vegetables and fruits; moreover, they are required to take regular exercise in the open air. Whey has been very much vaunted in the treatment of certain affections, and particularly phthisis and dyspepsia.

It is especially in the dyspepsia of high livers that the whey treatment has furnished brilliant results, and these are in my opinion due more to the good air which the patient breathes and the daily walks which he takes and the rigorous diet to which he is subjected than to the whey he drinks, which seems to me devoid of any very energetic therapeutic action.

Whey baths were formerly given; these have been abandoned on account of their cost. In fact, the skin covered with its epithelium does not absorb saline medicinal solutions, as you well know.

If the action of air on milk which has undergone the lactic fermentation be prolonged, a new transformation takes place under the influence of a new rod-shaped vibrio; I allude to the butyric fermentation. The lactic acid breaks up into butyric acid, carbonic acid and hydrogen.

$$\underset{\text{Lactic acid.}}{2(CO^2H^6O^3)} = \underset{\text{Butyric.}}{C^4H^8O^2} + CO^2 + H$$

Lastly, this butyric fermentation may give place to still another change, leading to the formation of leucine and tyrosine, ammonia, etc.; here you have the putrid fermentation. Cheese results from these two fermentations, the butyric and the putrid.

The following table will show you the richness of cheese in nitrogen. The Parmesan has the first rank. These figures explain how it is that a man can live on bread and cheese, since he finds in the latter aliment a notable quantity of nitrogen, fat and salts.

TABLE OF THE COMPOSITION OF CHEESES.

Cheeses.	Water.	Azotized Substances.	Fats.	Non-azot'd Substances.	Salts.
Blanc	68.760	19.989	9.429	6.032	0.810
Roquefort	34.550	26.520	30.140	3.720	5.070
Gruyère	40.000	31.5	24.00	1.5	3.00
Hollande	36.10	29.43	27.54	1.5	6.93
Neufchâtel	34.47	13.03	41.91	6.96	3.63
Camembert	51.94	18.90	21.05	4.40	4.71
Brie	45.25	18.48	25.73	4.83	5.61
Chester	35.92	25.99	36.34	7.59	4.16
Parmesan	27.56	44.08	15.95	6.69	5.72

All these fermentations take place more or less rapidly in milk, according to the temperature, and the cleanliness or want of cleanliness of the vessels which contain the milk. In fact, it requires but a small quantity of ferment to alter the milk, and this explains why it is that bottle-fed babies are so apt to sicken and die in the hot weather; according to Henri Fauvel the milk of nursing bottles is "turned" twenty-eight times out of thirty.[6]

Thus far, we have had to do only with the lactic fermentation, but the milk sugar may, like other sugars, undergo directly the alcoholic fermentation, and be transformed into alcohol and carbonic acid. There are three kinds of fermented milk; koumiss, kefir and galazyme. On the banks of the Caspian Sea and in the immense plains which surround it, the Tartar tribes raise innumerable troops of horses. It is mare's milk which is utilized; this is poured into a leather bottle containing a little old dried koumiss, then, whether the milk be beaten with a rod or the

[5] Klebs and Peuch.

[6] Academy des Sciences, 1881.

horseman uses his leathern bottle as a saddle, a fermentation takes place which results in the production of alcohol. This fermented mare's milk constitutes the koumiss which is distinguished as young or old koumiss according as the fermentation has been going on for a short or long time; the young koumiss having one per cent. of alcohol, the old two, and even three per cent.

You can judge of the modifications which this milk undergoes by the following analysis of Hartier:

Per 1000.	Mare's Milk.	Koumiss.
Albuminoids	19 to 28	11.20
Fatty Matters	12 to 15	12.00
Sugar of Milk	53 to 57	22.00
Lactic Acid	53 to 57	11.50
Carbolic Acid	53 to 57	7.85
Alcohol	53 to 57	16.50
Ashes or Salts	0.280	0.280

It is in another part of Russia, in the mountains of Caucasas, that kefir is made. Here a special substance is employed to ferment cow's milk, and which is now sold under the name of *Kefir grains*. This kefir grain owes its property to a microbe, the *dispora Caucasica*, which induces the alcoholic fermentation of the milk.

We have here a confirmation of the brilliant theories of our illustrious countryman, Pasteur, who has shown us that each special fermentation is due to a special micro-organism, and while the *oidium lactis* transforms the sugar of milk into lactic acid, the *dispora Caucasica* changes it into alcohol. A few of these grains are put into a bottle of milk, and the bottle is tightly corked, and its contents are subjected to a constant temperature of 15° or 16° C., and a fermented milk very similar to koumiss is thus obtained, a milk, however, which is less rich in alcohol, which is explained by the fact that cow's milk contains less sugar than mare's milk. This kefir is also distinguished as young and old kefir, the one containing 60 centigrammes per 100 of alcohol, the other as much as 1.50 grammes per 100. The following analysis indicates the difference between cow's milk and kefir.

Per 1000.	Cow's Milk.	Kefir.
Albumin	48.00	38.00
Fats	38.00	20.00
Sugar of Milk	41.60	20.025
Lactic Acid	41.60	4.00
Alcohol	41.60	8.00
Water and Salts	873.00	904.975
Density	1028	1026

To explain the diminution of butter and albuminous substances, it is necessary to take note that the kefir was made with skim milk.

Under the name of *galazyme* Schneep has described certain kinds of milk rendered alcoholic by the addition of sugar and a special ferment. Schneep made use of brewers' yeast, to which he added three parts of cane sugar and five parts of sugar of milk, which, if supposed to represent grammes, are sufficient for a litre of milk. This formula has been more or less modified by Pigatti, of Trieste, who associates with brewers' yeast, honey, alcohol, and wheat flour. Adam Gibson adds sugar of milk and cane sugar to skim milk in the process of fermentation, while Wolff employs grape sugar and brewers' yeast. My pupil, Deschiens, has very happily modified these formulæ; he makes use of those improved ferments which are employed to-day in the fabrication of pleasant liquors, ferments which are known under the name of high malt yeast. This yeast, as you see, has no odor, and is of a bluish-gray color; take four grammes, add ten grammes of sugar, and dissolve them in a little water, and pour the whole into a litre of milk; the bottle is corked and the cork tied in, and the next day, you have a sparkling beverage which you can enjoy, and which contains one per cent. of alcohol and a great deal of carbonic acid.

All these fermented milks — whether you have to do with koumiss, kefir, or galazyme — are identical in composition; they contain alcohol, carbonic acid, lactic acid, and the other elements of the milk. Their richness in alcohol is always the same, and oscillates between one and two per cent. At the same time, you can easily understand that with the process of Deschiens you can augment the quantity of alcohol by increasing the quantity of sugar and ferment. These fermented milks are generally well tolerated, especially by stomachs habituated to alcoholic liquors. By their alcohol and lactic acid they add to the tonic and digestive properties of the milk; by their carbonic acid they calm pain and vomiting, and we have consequently derived from these "champagne milks" good effects in the torpid form of tuberculosis, and especially in the gastric catarrh of drunkards. These fermented milks also enable us to institute an exclusive milk diet for our alcoholic patients, while, at the same time, restricting to a minimum the usage of alcohol.

Before entering on the study of milk diet and its applications, I must say a few words about the digestibility of milk and its physiological action. When milk enters the stomach, its casein is precipitated under the influence of the acid of the gastric juice; then this casein is subjected to the action of the pepsin which liquefies it and renders it absorbable under the form of pepto-casein. As for the lactose, it undergoes the lactic acid transformation, and furnishes to the stomach an element useful for digestion, the acid which I have just mentioned. The salts and the water are absorbed principally in the intestine, and it is the presence of these salts in notable proportion which tends to diminish the intestinal secretion. Lastly, the butter and fatty substances are subjected to the action of pancreatine in the intestine.

Of all these digestive acts, there are two which you ought especially to keep in mind, namely, the action of milk on the stomach and intestine. As Charles Richet has well said in his admirable treatise on the gastric juice, milk is the regulator of the acidity of the gastric juice; when this acidity is lacking by reason of atrophy or destruction of the peptic glands, milk furnishes, by its lactic acid, an element necessary for the stomachal digestion. When, on the other hand, the acidity is too great, the precipitated casein carries with it a great quantity of this acid, and thus mitigates the evil. Of these two modes of action, the first is certainly the most important. It often happens, however, that certain stomachs, by reason of excessive acidity, tolerate milk badly, but you have always ready at hand a means of attenuating this acidity by mixing with the milk lime-water, or the natural alkaline waters.

The action of milk on the intestines renders milk of great value in intestinal complaints, as milk is one of the most active constipating remedies which we possess. Lastly, do not forget that each litre of milk contains nine hundred grammes of water, and this explains the powerful diuretic action of this aliment.

To sum up, from the point of view of its physiological and therapeutical action, milk presents itself under the four following aspects: it is a reconstituent food; it is a regulator of the acidity of the gastric juice; it

is a constipating medicament, and it is a diuretic. We will now consider the applications of these properties in the usage of the milk diet.

The milk treatment may be exclusive, and here the patient takes nothing but milk. In other cases, the regimen is a mixed one, and the patient takes, along with his food, a considerable quantity of milk. There is an important precept laid down by Karel. of St. Petersburg, namely, that it is not enough to tell a patient to drink milk, but you should also vigorously fix the rules of this treatment.

The quantity of milk to administer daily varies between two and three quarts. Maurel has shown that three quarts per day suffices for nutrition, and that patients lose weight when any less quantity is used.[7] This quantity ought to be taken in fractional doses, and every hour you should give the patient a small tumblerful (from four to six ounces). When the stomach is intolerant, you can give one-fourth this amount every quarter of an hour, as Galliard recommends. The milk may be drunk hot or cold, and even ice-cold. You can also, to increase the thirst of the patient, add a little salt to each glass of milk. I also advise you to "cut" the milk, according to circumstances, with a great spoonful of alkaline water (Vichy or Vals), or with the same quantity of lime-water. Some have pretended that these additions impair the digestibility of milk; it is not so, and I have always ascertained, on the contrary, that milk is more easily digested by reason of this admixture.

Milk passes rapidly out of the stomach, and I have always found, in the hospital experiments which I have made to test the speed of the digestion of milk, that at the end of an hour, in healthy stomachs, a pint of milk had completely disappeared from the gastric cavity.

In fixing, then, at two hundred grammes (between six and seven ounces) the quantity of milk which a person ought to take every hour who is living on this aliment, you will not be likely to go astray. These results are completely opposed to those which Reichmann has recently obtained.[8] This experimenter pretends that three hundred cubic centimetres of milk take three hours to pass from the stomach to the intestine. He pretends also that boiled milk passes more readily out of the stomach than raw milk. My own experiences as before said, do not confirm those of Reichmann. As I have found no difference between raw and boiled milk from the point of view of digestibility, I ought, however, to tell you that some authorities, and Pinard in particular, have claimed that prolonged boiling favors the digestibility of milk in peptonizing a part of the albuminoid substances therein contained. This is a point that demands farther investigation.

But whatever pains you may take to lay down the rules of the milk diet, you will often see your efforts fail by reason of an unsurmountable obstacle, namely, the disrelish of certain patients for milk. At other times the patient tires of the milk diet after persevering a while with this regimen. To overcome this disgust, some have proposed to flavor the milk with essence of peppermint or anise; others to add a little coffee, rum or whiskey; others still (as Harzen), broth. All these expedients may be tried; often they will succeed, oftener they will fail.

As for the applications of milk to therapeutics, they are numerous. As a diuretic, this alimentary medicament finds its place in diseases of the heart and dropsies. We apply its reconstituent and diuretic action to the treatment of the nephrites, catarrhal and interstitial. By reason of its rapidity of digestion, the little labor which it imposes on the stomach, the production of lactic acid which it determines, we are enabled with advantage to utilize milk diet in the treatment of simple ulcer of the stomach, the gastric catarrh of drunkards, and in gastritis generally. Its constipating properties render milk eminently serviceable in diarrhœa and in chronic dysentery. Lastly, its reconstituent properties render it applicable to the treatment of diathetic states, such as gout and tuberculosis. But do not forget that the sugar of milk contraindicates the use of this diet in diabetes, despite the contrary affirmations of Dongin, and that, in certain cases of dilatation of the stomach, the milk regimen, by reason of the very abundance ingested, augments the gastrectasia; moreover, in certain cases of too great acidity of the stomach, the milk is badly supported. These reservations do not retract from the real therapeutic value of milk, of which I shall hereafter have more to say.

In concluding what I have to say to-day about the employment of milk in medicine, I can but just allude to a very singular application of milk to cachetic and anæmic states. I refer to intra-venous injections of milk. Certain authorities, struck by the similarity which exists between milk and blood, have proposed to utilize the former in transfusion. Hodder was the first to practise intra-venous injections of milk in the case of three patients in collapse from cholera, and several physicians in the United States have followed his example, particularly Howe, of New York, Gaillard Thomas, Meldon, Robert McDonnell, William Pepper, and Brinton. Jennings also has made an able defence of the employment of transfusions of milk in the last stages of cholera, of typhoid fever, of pernicious anæmia, and as a *succedaneum* to the injection of blood in all cases where the latter cannot be readily obtained.

Medical authority has not favored this practice in France; and despite the favorable opinion of Brown-Sequard and Dupuis respecting these intra-venous injections, they have been regarded as extremely dangerous; and in support of this view the experiments have been cited of Laborde and Culcer, Moutard, Martins and Richet, and Miglior Ranza in Italy. These experimenters have shown that the globules of butter constitute fatty embolisms which determine mortal accidents, due to anæmia of the bulbus; moreover, they show that the the therapeutic value of these injections is very questionable. These experiments seem to me to have settled the question.

EGGS.

Eggs constitute a complete aliment for birds, though incomplete for man. If, in fact, the egg contains azotized substances, albumen, vitelline, and an extract of meat; if it contains a fatty matter, the oil of the yolk (a phosphorated oil); if also it contains salts it still lacks the requisite quantity of water to satisfy nutrition, so that if eggs are more nourishing than milk, (ten parts of milk representing one of egg), they are nevertheless inferior to milk as a complete food.

The different primordial elements of which I have spoken, are distributed in the egg in the following manner:

[7] Maurel. On the Treatment of Diarrhœa and Chronic Dysentery by Milk Diet and the mixed Regimen (Bale de Ther., 1881, t C p. 199.
[8] Reichmann. Experiments on the digestion of milk. (Zeitschrift für Klin. Med., 1885. ix).

Azotized matters	14 per cent.
Fatty matters	10 per cent.
Salts	2 per cent.

In an egg weighing fifty grammes, the shell represents six, the yolk eight, and the white thirty-six.

Eggs are rapidly digested, but the digestion is influenced especially by the degree of cooking. While a hard-boiled egg is indigestible, a rare egg is speedily digested and demands little labor on the part of the stomach.

The different albuminoid substances that compose the egg contain a certain quantity of sulphur, hence it often happens, and in cases where the gastric juice is deficient, that a putrid decomposition of eggs takes place in the stomach, giving rise to an eructation of sulphuretted hydrogen. This is what I have described under the name of *putrid dyspepsia*.

It seems demonstrated, that the egg albumen may pass out in the urine (see in this connection the experiments of Robinson and Semmola), thus constituting an alimentary albuminuria, analogous to alimentary glycosuria. Hence the white of egg is proscribed from the dietary of the albuminuric. I shall return to this subject when I come to speak of the dieteties of Bright's disease. But I ought to tell you here that recent experiments of Stokevis show that if an exclusive alimentation with raw eggs may determine the passage of albumen in the urine, it is easy enough to prevent this by cooking the eggs.

It has also been maintained that the albumen of egg possesses constipating properties, hence the white of egg has been recommended in the treatment of diarrhœa. I do not think there is much to support this view.

In pharmacy we make much use of eggs for emulsions; there is one which is in general use, and is described under the name of *lait de poule* (hen's milk), and which consists, you know, in emulsifying the yolks of two eggs in boiling water, and flavoring the whole with orange-flower water. I also recommend the preparation known under the name of *American cream*. You beat up the yolks of two eggs, add powdered sugar and flavor the whole with a little rum or brandy or sherry wine. This is a very strengthening nutrient mixture which is generally well supported.

Do not forget also that eggs poached in broth, or broth with the simple addition of the yolks of eggs forms a nutrient preparation which patients are likely to be fond of.

I have now finished the complete aliments, and propose to devote the next lecture to a subject much more extensive, the study of the complex aliments.

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Original Articles.

IODOFORM POISONING.[1]

BY ELBRIDGE G. CUTLER, M.D.

Most of the cases of poisoning by iodoform recorded have followed its application to wounds, but it has also resulted from internal administration (as is seen in the accompanying table, cases 56 and 57, by Oberlaender where 42.0 grammes were taken in eighty days and 5.0 grammes in seven days respectively), as well as when introduced into the vagina or rectum and when applied to the skin.

The symptoms observed have sprung from disturbances of the heart and brain more especially.

That the physical qualities of iodoform cannot be essentially different from iodine is seen from the fact that it contains 96.47 per cent. of iodine.

Animals. Experiments which have been made on animals with iodoform especially by Binz [2] Hoegyes [3] Moleschott [4] Moeller, and Hoepfl seem to bear out this belief. The symptoms which Binz and Moeller obtained after exhibiting large doses were hypnotic action, emaciation, fatty degeneration of the liver, heart, kidneys and lung epithelium. In the subcutaneous injection of iodoform the mucous membrane of the stomach was one of the first organs to be injured. Hoegyes observed besides the symptoms just mentioned, hæmorrhages into the lobes of the lungs. Death occurs with the appearances of general paralysis, according to Binz, special paralysis of the respiratory centre. Falkson [5] experimented by placing the iodoform in the peritoneal sac. He distinguished an acute and a chronic form of poisoning. In the acute the animal is languid, trembles a good deal, is sleepy, has no appetite, occasionally vomits, and has a disturbed gait. The somnolence increases to coma, respiration and the heart's action are quiet, the latter may be quickened, reflex excitation is retained in the coma, epileptic attacks frequently occur with marked opisthotanos. There is a decided loss in weight. An intermediate stage of apparently perfect health is seen between the operation and the beginning of toxic symptoms (in dogs), which shows that a certain cumulation of the poison occurs in the blood and tissue-fluids before these symptoms come on. This stage sometimes covers a period of several days.

In the chronic poisoning the preliminary stage of health lasts longer. The first symptoms are diminished appetite, with vomiting and increased thirst, then occur languor, indisposition to move, anger at being disturbed, nasal catarrh, dyspnœa, irregularity in the urinary secretion, albumen in the urine, emaciation, trembling of the muscles, coma, difficult respiration.

[1] Concluded from page 503.
[2] Archiv. für experimentelle Pathologie und Pharmakologie Band, viii und xiii.
[3] Archiv. für experimentelle Pathologie und Pharmakologie Band, x.
[4] Wiener Medicinische Wochenschrift, 1878.
[5] Archiv. für Klinische Chirurgie, 1882, xxviii, 112-156.

The result of his autopsies was similar to that of the above observers. He found that the iodoform might become encapsulated in the peritoneum just like any other foreign body, but its resorption was not thereby stopped. This same encapsulating was found to occur by Gussenbauer in some of his patients.

Human Subject. The toxic symptoms caused by iodoform in human subjects are very much the same as those obtained on experimentation with lower animals. A narcotic soporific action is observed and a considerable increase in the frequency of the pulse, 130 to 160 beats or more. These symptoms are not serious but sometimes very grave ones occur which may lead to a fatal issue. In some cases "aseptic fever," so-called, has been observed with a temperature of 103°, and death with a clear sensorium. More frequently, severe brain disturbances occur either with the picture of an acute meningitis or true mental disease which may be followed by death, even when the drug has been discarded. Autopsy in such cases has given fatty degeneration of internal organs, especially the liver. Sometimes very severe and lasting attacks of diarrhœa have been observed.

It has been found that in factories where iodine preparations are manufactured the employés suffer from acute, subacute, and chronic poisoning. The acute form is distinguished by severe irritative cough, headache, inflammation of the conjunctivæ and nasal mucous membrane, sometimes also by temporary loss of consciousness. In the subacute affection is comprehended protracted swelling of eyelids, flow of tears, severe frontal headache, frequent sneezing (iodine catarrh). Fever, elevation of temperature, increase of pulse seldom occur in these employés. More frequent than the above are cases of chronic poisoning, so-called iodism, a cachectic condition which develops as the result of frequent and lasting gastric catarrh.

Symptoms. The symptoms of poisoning by iodoform in patients show different degrees. Schede made out six degrees, Koenig divides cases into mild and severe, Nussbaum gives three as follows:

(1) The mildest form is that in which the symptoms disappear in a few days after removing the iodoform. They consist chiefly of iodoform taste and smell, patients cease eating, sleep little, are excited, angry, sometimes a little delirious and consider themselves sicker than they really are.

(2) The second degree is distinguished by complete loss of appetite which may increase to absolute refusal of food so that finally patients will not even swallow wine or beer; when they are persuaded to take food they complain that everything tastes like wood to them. The worst feature is the mental disturbance. There is melancholy and tearfulness, an excitability and despondency which is truly most painful for the patient and the friends. Morphia and chloral sometimes refuse to act. With open eyes patients frequently do not recognize those around them, suddenly spring from bed, will dress and attempt to get away without knowing why or where. They pick at the bed clothes, throw their arms about, are wholly inconsolable, believe that they will never recover and that they will surely become insane. This wretched condition may last for weeks in spite of leaving off the iodoform, it may make a pause and then come on again although the wounds treated with iodoform have long been healed; indeed this condition sometimes first occurs after healing (encapsuling, see case 19 in table). Finally refusal of food ceases, melancholy gives place to an animated appearance and patients recover.

(3) The third degree, on the other hand, shows itself two or three days after the application of iodoform, there is complete apathy, the patient wholly loses consciousness. From the beginning there is absolute refusal of food, the pulse is rapid and thread-like, respiration is sighing, there is sopor. Patients spring out of bed if they still have the power, cry out in words which are indistinguishable, and lisp or speak imperfectly. They lie for hours without reaction, then again they are unquiet. Morphia and chloral are often of no service. The temperature constantly sinks lower. The wild crying out and throwing about of the arms, picking and tearing at the bed-clothes and dressings, permit us to suppose that patients have most unpleasant sensations. All stimulating means, camphor injections, ether, atropine, strychina and so forth prove to be wholly fruitless. The removal of all the iodoform is of just as little use. Patients die with the appearance of pronounced collapse after they have been for hours and days even cold and pulseless with stertorous breathing.

These groups include most of the prominent symptoms, individual cases present others which may be mentioned.

Long continued headache is frequent.

Rise of temperature is not unfrequently seen, though severe even fatal cases run their course without it; 102° is seldom exceeded.

The pulse is almost always increased in frequency, usually as the case progresses towards a fatal issue it becomes small, easily compressible and weak. It ranges from 110 to 180 or a number which cannot be counted.

The respirations are frequently suspirious, or superficial and rapid.

The tongue may have a brownish coat.

Restlessness and delirium are very frequent symptoms. Involuntary discharges are not rare.

Emaciation is marked usually, especially in the chronic cases and where it is progressive a fatal issue is to be apprehended.

Pallor and a feeling of faintness with a good pulse are not so very rare.

Feeling of weakness, hebetude and sleeplessness accompany the milder cases usually.

Nausea, vomiting and anorexia are extremely frequent.

Papulous and simple erythema of the whole body has been seen; it usually has disappeared rapidly on leaving off the iodoform.

The symptoms are most striking and severe at night usually.

Chemical changes. Hoegyes considers that iodoform dissolves in the fatty matters with which it comes in contact, from this solution iodine becomes free and forms with the albumen present iodine albumen which is resorbed. According to Binz and Moeller it is dissolved by the fat, iodine is set free which is changed by the alkali present, into iodides and iodates which again circulate in the blood and act on the ganglion cells of the brain and finally appear in the urine and other secretions as iodide of soda and other iodine organic compounds. They deny the occurrence of the intermediate stage claimed by Hoegyes of iodine albumen.

Behring, who experimented on rabbits, thinks that

iodoform acts by abstracting alkali from the organism, that in sufficient doses it may cause the death of the animal by this action, and that one may by a proper exhibition of alkali establish a remarkable tolerance of iodoform.

Ætiology. It is difficult to explain why the poisoning occurs. Various views are entertained on this point. The manufacturers have been blamed, the article being at first expensive and now cheap, it has been suggested that the iodoform might perhaps be impure. That this is not the case may be inferred from the fact that the best and worst results have followed the use of the drug from the same parcel. Others believe the cause to lie in the variable power of absorption of the tissues and consider that it has an especially injurious action when it comes in contact with much fat because it becomes dissolved thereby. If this assumption were correct we should expect to see very fat persons more susceptible to the drug than others, which has not thus far been observed to be the case. Others again, blame the age of the individual, that is advanced age. Young people are said to bear it well, cases of poisoning are less severe with them because they can eliminate it better, their organs of elimination being more apt to be sound at the start. It is certain that of the recorded cases fewer deaths have occurred under the age of fifty than above it. Idiosycrasy is a sufficient cause for many. Ludwig thinks that in the circulation of iodoform through the body besides the giving off of iodine there is probably some other organic combination formed which causes the toxic action. Nussbaum [6] believes that probably the concurrence of many conditions causes a liability to poisoning. He speaks especially of a large fatty wound capable of resorption, degenerated heart muscle and diseased kidneys, and recognizes also in a sick enfeebled organism the most dangerous disposition to iodoform poisoning. Mosetig finally regards the simultaneous application of iodoform and carbolic acid as the chief cause. He always used pure iodoform treatment himself. He washes the wound with clean water, then strews the iodoform powder on it and over it lays charpie free from fat and gutta-percha paper. The carbolic acid, according to him, causes nephritic irritation and that is said to hinder the elimination from the body and so cause poisoning. This opinion has a great deal of probability in its favor, first, because Mosetig in spite of his very extensive use of the treatment (3,000 hospital and 4,000 ambulatory patients), has observed no poisoning at all, and second, because in many of the cases recorded in the above table other disinfectants are stated to have been used at the same time. On the other hand the number of cases where no mention of other disinfectants is made, is very large and there are also many where none such could have been used. We are forced therefore, to the conclusion that the cause is yet to be proved.

Bum arrives at the following conclusions:

(1) Iodoform has a poisonous action when the iodine freed in the organism does not become perfectly combined.

(2) This poisoning will happen where the quantity of iodoform introduced is 1, over large, 2, and in qualitative and quantitative changes of the blood. It is surest to occur where these two forces work together.

(3) The use at once or in short intervals of very large quantities of iodoform, especially in anæmic, very young and old individuals is to be avoided.

(4) The iodoform dressing is to be changed as seldom as possible in order to avoid a cumulative action, (and at the same time the iodoform is not to be removed the wound washed and fresh powder or other form applied, as a surface the best suited for absorption is left.)

(5) The iodoform in the wound must never be exposed to a strong pressure as it aids absorption; the dressing is therefore never to be applied tightly.

Absorption. With regard to the absorption of iodoform Zeller [7] found that the solubility of iodoform in water was the same as in blood-serum, that is, 0,212 grammes to 1,000 grammes water. Resorption from the stomach was very slow (shown by determining the quantity of iodine eliminated in the urine), that from the peritoneal surface very rapid, and that from the surface of wounds could not be reckoned. Falkson found that even dry crystalline iodoform was absorbed through the intact skin. He made four experiments on different individuals by strewing crystals of iodoform on the forearm and covering it with dry charpie free from fat and gutta-percha paper. After twenty-four to forty-eight hours the urine gave the iodine reaction distinctly. The arm on removing the bandage was always perfectly dry. General testimony seems to prove that a granulating surface will absorb it more readily than a fresh wound, a serous membrane quicker than a muscle-wound, a freshly-sawed bony surface easier than a sequester-capsule, a serous surface in normal condition better than a thickened inflamed one. It is absorbed very readily from the vagina. When applied to a wound by the finger or rubbed in, absorption seems to be almost certain.

Detection in Urine. If the iodine reaction is not obtained in all cases in the urine where iodoform is employed it certainly is obtained in all degrees of poisoning. In some severe cases there is albumen and perhaps casts in addition.

(1) To detect iodoform or rather iodine in the urine, the compound is to be first decomposed by fuming nitric acid and dilute sulphuric acid, then a little starch paste and a few drops of bisulphide of carbon are to be added, whereupon a beautiful blue color occurs. On shaking it about, a small portion of the iodine is dissolved by the bisulphide of carbon and a dark-blue ring of iodide of starch is formed on the layer of bisulphide of carbon.

(2) A second though less reliable method is as follows: After starch paste and dilute nitric acid have been added to the urine a few drops of fuming nitric acid are added, when a blue color occurs which on heating disappears and returns again on cooling.

(3) By a third method, after sulphuric acid and fuming nitric acid have been added the fluid is shaken with chloroform. There occurs through solution of the iodine in the chloroform a violet color.

(4) Sometimes the iodine is in such combination that the above reagents do not free it, chlorine water may then be added for this purpose, as I learn from Professor Hills, or the urine may have to be incinerated and then tested (Harnack).

Pathological appearances are not constant.

Fatty degeneration of the heart muscle, cloudy swelling of the renal tubular epithelium and fatty de-

[6] Werth und Gefahr der Antiseptica, Vortrag in der Sitzung des Aerztlichen Vereins zu Muenchen am 12 April, 1882.

[7] Versuche ueber die Resorption des Iodoform. Congress of German Society of Surgery in Berlin, June, 1882.

generation of the liver have been reported not unfrequently; sometimes gastritis has been seen. Croupous pneumonia has been observed by Aschenbrandt in lower animals after inhalations and "pneumonic symptoms," by Koenig, Case 22 (no account of autopsy). In this latter case and in Cases 24 and 32 of the table the suspicion is well founded, I think, that the appearances were probably due to inspiration of foreign matter from the wound or of particles of food. Œdema of the lung has been several times observed. Sometimes there has been œdema of the meninges or brain. Harnack found that certain organs of the body, namely, the brain, contained disproportionately more iodine than others, as the liver and kidneys, and curiously enough, this was found far more abundantly in the cerebellum.

General Remarks. With regard to the age of the individual the table shows that of seventy-seven cases of poisoning, twenty-six were under forty years, about one third, and that of the fatal cases, twenty-nine in number, all but two were under forty. A larger number of cases might materially alter these figures.

There seems to be no maximum dose of safety from symptoms; one gramme has given rise to grave consequences and even from a minute amount as in Bermann's case, number 35, in the table, unpleasant results have followed. On the other hand, large amounts 100 to 200 grammes or more have proved harmless.

The smaller the amount of surface covered by iodoform, and the less natural cavities of the body are exposed to its action, or freshly-cut bones, the better is the chance of immunity. Iodoform should never be smeared on or rubbed in, either as powder or salve. No accompanying disinfectant, as carbolic acid or corrosive sublimate, should be used.

Prognosis. In youthful persons a quickening of the pulse, 130 to 140 beats in the minute, may last for a long time without any other disturbance following, but if in adults or elderly people free from fever, a permanent and considerable frequency and diminution in strength of the pulse occurs, danger is at hand. If the mental condition gets worse and coma comes on with collapse the prognosis is grave. Emaciation if progressive is dangerous, but where it remains stationary or slightly diminishes the prognosis is favorable.

Treatment. It has been theoretically proposed (Harnack) to give compounds of the alkalies with vegetable acids internally at the first appearance of the symptoms of poisoning, as acetate of potash, and so forth. The object being to furnish the system with abundance of alkali which may combine with any free iodine which may be present. For this purpose the potash are better than the soda compounds, as poisoning has followed the use of the latter.

This course was pursued by Behring in Case 64. If this treatment does not prove beneficial, transfusion of an alkaline common salt solution is suggested, as was successfully accomplished by Kocher, Case 59. Harnack further suggests that the iodoform be washed off the wound with an alkaline carbonate solution, and then with luke-warm water, and that lastly magnesia usta be powdered on.

Conclusions. From what has preceded, the following conclusions seem warrantable:

(1) Fresh wounds or unhealthy or tuberculous surfaces are the only ones fitted for the application of iodoform.

(2) Only a thin layer or small amount of iodoform is to be applied.

(3) When granulations appear healthy, iodoform should be omitted and some other non-poisonous substance substituted.

(4) At the first symptom of poisoning, or coincidently with the original use of it, compounds of the alkalies and vegetable acids are to be given by the mouth at frequent intervals, as acetate of potash. If severe symptoms supervene, transfusion with common salt solution is to be resorted to, and the wound is to be washed free from iodoform with pure water and an alkaline carbonate solution and afterward powdered magnesia is to be dusted on.

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ABUSE OF MEDICAL CHARITY. — A REMEDY APPLIED IN 3000 CASES OF OUT-DOOR PATIENTS: RESULTS.[1]

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AT the present time when "a little less than one-fourth"[2] of the inhabitants of Boston is receiving medical treatment free of charge, it is certainly of great moment to the physicians of Boston to learn to what extent their charity is being abused, and if possible to find some remedy to correct such abuse.

It is hardly necessary to say a word as to the mere existence of such abuse, as it would be almost impossible to find a physician, who has had even a limited experience with charity cases, who would deny it. With such a physician it is perhaps his weekly or even daily experience to treat gratuitously certain persons who live in comfortable homes, well furnished, are themselves well clad, not only able to procure all the necessities of life, but even many of the luxuries. Many persons in such circumstances, in considering their expenditures, seem to make no provision for sickness, but as a matter of course look upon medical treatment as a blessing as free to them as air or sunshine, and so appropriate what may be left over from the cost of necessities of life to an evening at the theatre or to some other gratification equally out of place under the circumstances.

To those who have not had experience with charity cases, does it seem probable that all the ninety thousand and more persons in Boston applying for free medical treatment are objects of medical charity? Luckily, we have a standard of numerical comparison whereby we can, reasoning from analogy, raise the question above probability. In New York City the experiment has lately been tried of investigating the circumstances of each doubtful case, *seriatim*, as they applied at the New York Dispensary. The number of cases investigated[3] was 845; of this number, 504 were deserving; 235 were not; 38 were doubtful, and 68 could not be found. Thus 59.6 per cent. were deserving.

Dr. A. Siebert[4] of the German Dispensary, reports that out of 434 cases investigated, 107 gave wrong addresses; 187 were fully able to pay; 42 were able to pay small fees; 75 were unable to pay, while 23 gave no answer. In another series,[5] investigated for the managers of this dispensary by the Charity Organization Society, from January to March, inclusive, 1884, out of 192 cases, 64 were able to pay, 65 not able, while 63 gave wrong addresses.

In another New York charitable institution, in a series[6] of 79 investigated, 24 were able to pay and 27 gave wrong addresses. And finally, in another series of 400 cases, one-third was unworthy and one-third had given wrong addresses. As a result of these investigations, it was found that something over 50 per cent. of the cases were unworthy of medical charity. In the light of these figures, is it not reasonable to suppose that at least a large minority of such cases are to be found in Boston? Further evidence on this point will be adduced from the writer's figures as given later in this paper, which would go to prove that at least 23 per cent. of all cases applying in Boston are unworthy of medical charity. Much of the same results have been obtained in similar investigations in Philadelphia.

And when we consider that in London and New York, more than one-fourth of the inhabitants are treated free of charge; in Philadelphia, one-fifth; while in Liverpool 298,260 persons out of a population of 579,724,[7] or more than one-half, are so treated, — one can realize the extent to which the abuse has gone.

It is not proposed in this article to consider the causes which have produced this state of affairs, wherein so large a proportion of the inhabitants of large cities have got into the fashion of seeking medical charity. Nor is it necessary to consider in this place the motives which induce medical men to give so much of their services. However widely writers on the subject have differed on these two questions, there seems to be much unanimity in the opinion that promiscuous medical charity is alike demoralizing to the recipient, and detrimental at least to the income of practitioners taken as a body.

Scarcely a month passes in which the *London Lancet* or *British Medical Journal* fails to contain some complaint of the absorption of private patients into Provident Associations or free hospitals and dispensaries. In an editorial in the *London Lancet*[8] on a paper by Mr. C. J. Radley on "The best plan for establishing Provident Dispensaries in due relation to hospitals," there will be found abundance of such complaint; also in another editorial[9] on a proposition to disfranchise persons receiving medical charity. New York and Philadelphia journals have of late mirrored much the same state of affairs in those cities, especially in the former. Dr. W. L. Carr[10] has written on the impoverishment of the young physician through abuse of medical charity. While "Caritas Vera"[11] complains that in going a not very long distance to visit a certain patient, he must pass by no less than four free dispensaries. He suggests that if patients were questioned more thoroughly by dispensary physicians there would be less abuse.

The abuse of medical charity having for some time been admitted, and the wide-spread evils therefrom noted, attempts have naturally been made to remedy the trouble. The two principal schemes which have been tried are the Provident Societies, principally in Europe, and the Charity Organization Society in America. In the London Provident Society — the earliest type of them all — the person seeking medical aid may be elevated from the position of a charity patient to the dignity of a pay patient, by paying the sum of sixpence per month; of ten-pence for husband and wife, and two-pence for children under fourteen years of age. The scheme does not seem to thrive on American soil, for some reason. In England, one would judge from editorials and communications in the British journals, that on the one hand the scheme diminished the receipts of the physician while adding to his labors; while many apparently respectable persons who would scorn to accept charity as such, have satisfied their scruples and avoided the physician's bill by joining a Provident Dispensary. In this way the

[1] Read at the Annual Meeting of the Massachusetts Medical Society, June 8, 1886, and recommended for publication by the Society.
[2] C. D. Kellogg, N. Y. Medical Record, Nov. 28, 1885, p. 616.
[3] Dr. T. F. Gaunt, N. Y. Medical Record, Nov. 28, 1885, p. 616.
[4] Loc. cit.
[5] N. Y. Med. Record, June 13, 1885, p. 670. Vide Edit., loc. cit. May 30, 1885, p. 596.
[6] Loc. cit. Nov. 28, 1885, p. 616.
[7] British Med. Jour., Sept. 5, 1885, p. 471 *et seq.*
[8] Jan. 31, 1885, p. 214.
[9] Loc. cit. June 9, 1885.
[10] N. Y. Med. Rec., March 7, 1885, p. 278.
[11] Idem, Feb. 7, 1885, p. 168.

abuse of medical charity has not been corrected but has taken a more respectable form, in which guise the abuse is more difficult to meet.

In case of the Charity Organization Society, it is proposed that the various charities of the city, instead of working at cross purposes — as, for example, by assisting a family previously found unworthy of assistance by a neighboring charity — shall have a system of intercommunication, and shall assist only those cases which are found worthy after examination of their circumstances. Thus the register of the New York Charity Organization Society contains the names of 98,000 families who have applied for medical relief, together with their standard of worthiness or the opposite.

Of late many such alliances have been established in European cities as well as in no less than forty cities and towns in this country. It is hardly necessary to say that the investigation bears on general relief as well as medical. In the writer's opinion, this scheme is calculated to do great good. For instance, if all the charitable institutions in Boston should agree to treat no case that did not bring a card from the Associated Charities, say, endorsing the person's worthiness after investigation, how completely would the abuse of medical charity be stopped! But that ideal time has not yet arrived.

If it were possible for each dispensary and hospital to contain a register of the thousands of families in Boston unworthy of medical charity, it would apparently not be difficult, nor would it take too much of the physician's time, to decide which cases to reject. In the absence of such information, at present it is possible to learn through a card of the Associated Charities the charity status of any family, where it is possible to look it up. This might work reasonably well in cases of no urgency, as with most of those coming to the consulting rooms of hospitals and dispensaries. Of course, treatment would usually have to be deferred for twenty-four hours. But in regard to cases sick in bed such as the district physician attends, prompt treatment is demanded by the nature of the case, and time could not be allowed for investigation. In the light of these suggestions, it must be admitted that the scheme would be cumbrous as applied to the district physician's work.

During the early months of his district dispensary practice — October to December, 1882 — it became evident to the writer, judging from the surroundings of many of the patients — as from the rents paid, the furnishing of their houses, and the amount of their wages when discoverable — that many were able to pay their physician's bills.

The position of affairs cannot be better illustrated than by relating two or three of the more glaring cases.

He was called to treat a sick child in a family occupying a well-furnished suite of rooms. On inquiring as to the apparent prosperity of the family, the mother declared that they had seen better days, but that her husband was then sick in the hospital with an incurable disease, and that the rest of the family was living on money loaned on the furniture. Some time after, it was learned accidentally through another family living in the same block, that in reality the husband was well and attending to his busines; he being the junior partner in a liquor firm which owns two establishments, not far from the lower end of Broadway, South Boston.

In another case where the writer's suspicions were aroused, the mother declared that her husband earned but six dollars a week as a barber working on short time, and with several children they were very poor. The husband was afterwards discovered to be the proprietor of a barber's shop on Broadway, and there was business enough to compel him to hire two assistants. He was amply able to pay his physician's bill.

In still another case, after having treated a woman on several occasions it was accidentally learned that her husband owned the house in which lived another family besides their own; that he further owned two horses and carts and was doing a retail coal business.

It is perhaps hardly worth while mentioning the family who explained that the reason they could pay no physician's bill, for the time being, was, that they had to set apart a certain sum each month, to meet a bill on a comparatively expensive set of furniture they had lately purchased on the instalment plan.

And finally, may be noted the case of the lady — previously a private patient of the writer's — who clad in her third-best dress, probably for the occasion, unwittingly stepped into his presence for treatment at the woman's room at the Dispensary.

It is only fair to say, that aggravated cases like the above were only encountered while the writer was yet new to the district, and before he began to question as to the circumstances of the patients.

(To be continued.)

RECENT PROGRESS IN OPHTHALMOLOGY.

BY O. F. WADSWORTH, M.D., AND MYLES STANDISH, M.D.

ANATOMY OF THE HUMAN IRIS.

FUCHS[1] has made a study of the iris with particular regard to its surfaces. He made sections of the specimens so studied to explain what was seen on the surface. He found brown irides the most favorable, and selected those having a medium pupillary opening. (3 to 4 mm.)

The anterior surface of the iris. A circle divides this surface of the iris into two zones of unequal width, the pupillary and the ciliary zones.

The pupillary zone has a breadth of about 1 mm., and is crossed by a number of ridges which extend from the circle to the pupil's edge. In the depressions between these ridges a fine brown network can be seen with a high power.

The ciliary zone which constitutes the greater portion of the iris, is partially if not entirely hidden behind the sclera in the living eye. This contains a plicate zone made up by a series of nearly concentric furrows, from one to seven in number, and a marginal zone, commencing at the outermost furrow of the plicate zone, and which is distinguished by a number of apertures in its surface giving it a sieve-like appearance. The anterior surface of the iris is covered with endothelium, immediately beneath which the iris-stroma is much richer in cells than elsewhere; this layer is the anterior limiting membrane. The fibres are extremely fine and run perpendicularly to the surface. The anterior limiting membrane is thickest in the flat portion of the ciliary zone and on the prominent ridges of the plicate portion. The cells of this layer contain pigment, and upon its amount depends the color of the iris. The crypts, the apertures spoken

[1] Archiv für Ophthalmologie, Bd. xxxi, Abth, iii.

of above, lie mostly to the outer side of the small circle, but also somewhat on the inner side. The crypt is not a blind sack but a lymph space opening into the iris. The anterior limiting membrane bends over into the mouth of the crypt, and becoming thinner as it extends inwards is finally lost at some distance from the surface. The vascular layer of the iris occupies the space between the anterior and posterior limiting membranes. This space is made up of the vessels and their adventitia, exceedingly fine fibrillæ of connecting tissue, and some branching cells. It is an open and sponge-like tissue, the central portion about the larger vessels being especially open, having large spaces, freely connecting with each other. We have, therefore, in the iris, a system of great slit-shaped channels, in the midst of which the vessels lie, and these canals connect the meshes of the ligamentum pectinatum with the anterior chamber by means of the open mouths of the crypts.

The posterior surface of the iris is covered with radiating folds, in addition to which there are deep concentric furrows parallel with the pupillary margin.

The pigment on the posterior surface is divided into two layers, the outermost layer is much the thicker and consists of many layers of cells, and is folded on itself, as described above, the inner layer is, however, perfectly flat, and consists of flat cells intimately adherent to the posterior limiting membrane, and these layers can move one upon the other. The posterior limiting membrane consists of fine radiating fibrillæ which have no neuclei, and so are certainly not muscle. This membrane is the only layer not thrown into folds by the dilitation of the pupil, and consequently must be the active agency in dilating the pupil. As the result of his investigations, Fuchs denies the existence of a dilator muscle in the iris of man.

When the pupil contracts, all of the tissues are stretched in a radial direction, the vessels are straightened, the circular furrows are made shallower, the small circle becomes more marked, the crypts in its neighborhood are drawn out into thin slits and nearly closed. On the posterior surface the radial folds become more prominent and the circular ones shallower. Sections show that the thickness of the iris lessened during contraction. When the pupil dilates the changes are the converse of those seen in contraction. The vessels become strongly convoluted, the circular furrows deep, the mouths of the crypts become more circular or, in extreme dilitation, become slits transversely to a radius of the iris. The thickening of the iris is chiefly in the pupillary zone. During the contraction of the pupil the apertures in the pupillary zone become smaller, and those of the periphery larger, and the opposite is true in dilitation. It is probably through these channels that the iris absorbs blood and pus from the anterior chamber. The movements of the iris probably aid in the propulsion of fluids in these canals.

This anatomical arrangement has probably some bearing on the action of mydriatics and myotics on intraocular pressure.

INNERVATION OF THE IRIS.

Kowalenski[3] has published an elaborate historical review of the investigations of the nerve centers controlling the dilitation of the pupils, followed by a long series of investigations of his own, from which he draws the following conclusions:

(1) The hypothesis of Schiff and Salkowski, as to the course of the nerve fibres dilating the pupils, from the intra-cranial center through the lateral portion of the cervical portion of the spinal cord, and through the cervical portion of the sympathetic nerve to the eye: also,

(2) The hypothesis of Budge of the existence of an autonomous centre in the spinal cord for fibres dilating the pupil, do not agree with the facts.

(3) The autonomous centre of the fibres dilating the pupil lies in the cranial cavity and can be excited by reflex irritation.

(4) Inter-central exciting fibres pass from this centre to the cellular origin of the dilators of the pupils in two directions, through the cerebrum and through the spinal cord.

(5) The fibres passing through the spinal cord seem to take their course through the lateral columns; each lateral column contains exciting fibres for both sides.

(6) The dilators of the pupils coming from the spinal cord do not all pass to the eye through the cervical portion of the sympathetic nerve, some taking another course. (vertebral nerve?)

(7) The lateral columns are the main channels for transmitting the irritation from the sciatic nerves to the cerebrel centre of the dilators of the pupils, each column containing fibres of both sciatic nerves in the cervical portion of the spinal cord. Each one is capable of transmitting reflex irritation to the dilators of the pupils of both sides.

(8) That the pneumogastric, hypoglossus, lingual, and intra-orbital nerves also dilate the pupil by reflex irritation, as well as the sensory nerves.

(9) The cerebral centre of the dilators of the pupils can also be excited by checking the supply of arterial blood to the brain (by compressing the carotids), and by suppressing respiration.

Schweiger[3] notes that after the complete denudation of the posterior circumference of the globe (resection of considerable sections of the ciliary and optic nerves), if the operation be performed in a case with normal iris the effect is mydriasis ad maximum, so that atrophia has no further influence. Eserine, however, will produce well-marked myosis, except in cases in which the drug could not have produced any effect before the operation, as, for instance, in glaucomatous mydriasis. From this reaction to the influence of eserine no inference can be drawn as to the regeneration of the motor-nerve fibres; besides, no contraction of the pupil can be produced by the entrance of light into the other eye.

ABSENCE OF PUPILLARY REFLEX.

Uhthoff[4] has published a very interesting tabulation of cases in which there was absence of pupillary reflex (Argyll Robertson pupil). He commences with a description of his method of examination. He prefers a dark room and concentrates the light from a gas jet upon the pupil by means of a convex lens. He warns observers against overlooking slight reactions in small pupils, and of the dangers of mistaking movements of the globe, and the reaction of the pupil to efforts of accommodation for the reaction to light. He objects strenuously to the method sometimes employed of

[3] Kowalensky. Investigations on the Innervation of the Pupil. Kasan, 1885. Archives of Ophthalmology, Vol. xiv, No. 4.

[3] Archives of Ophthalmology, Vol. xiv, Nos. 2-3, p. 231.

[4] Berliner, Klin. Wochensch, 1886, Nos. 3-4.

causing the patient to close his lids for a few moments and then suddenly opening them. He first reviews the results of the examination of four thousand cases of mental disease by Mœli, Thomsen, Siemerling. In these four thousand cases, absence of pupillary reflex occurred in four hundred and ninety-two individuals, of which number four hundred and twenty-one were general paralytics; twenty-one had tabes; eleven, senile dementia; eleven, chronic alcoholism; nine, syphilis; six, focal lesions; three, head injuries, without other cerebral symptoms; and ten cases had either mental alienation or epilepsy. The fact that these four thousand cases were all cases suffering from mental disease accounts, of course, for the comparatively small number of tabetics. Old age, while very often producing small pupils, does not produce an absence of the pupillary reflex. The symptoms occurred in more than half the cases of general paralysis. Many of the cases were under observation for long periods of time. Uhthorff himself made three distinct sets of observations.

First, he examined several hundred healthy persons and did not find the pupillary reflex absent in a single case.

Second, he examined a large number of cases in various hospitals, and only found the condition present in cases that would naturally come to a clinic for nervous diseases.

Thirdly, he examined 550 patients in Westphal's clinic for nervous diseases, and 12,000 cases attending Schœler's clinic of diseases of the eye. Among the 12,550 cases in Schœler's and Westphal's clinics, absence of pupillary reflex occurred 136 times, excluding cases of ophthalmoplegia interna.

Of these 136 cases: I. 92 had tabes. Included in these 92 cases credited to tabes, are six cases in which the diagnosis was not absolutely certain, 4 in which the light reaction was not absolutely wanting, 29 in which atrophy optici existed, 15 who had ocular paralysis, 5 who had paralysis of accommodation in one eye, and 12 in which there was marked difference in the size of the pupils.

II. Twelve had general paralysis, of this number 4 had atrophy optici.

III. Eleven had syphilis, including cases of cerebral syphilis.

IV. Eight had other cerebral diseases, injuries to the head 2, cerebral tumor 2, hydrocephalus 1, post-neuritic atrophy 1, hemiplegia 1, pachymeningitis 1.

V. Two had multiple neuritis.

VI. Two had railway spine.

VII. In two cases the phenomenon was congenital, but in both cases there was only a rudimentary development of the iris.

VIII. One case was congenitally imbecile, but this patient had also retinitis pigmentosa, with a very large amount of concentric diminution of the field of vision.

IX. One case had an aneurism of the innominate artery, the phenomenon in this case our author considers as probably due to pressure on the sympathetic nerve.

X. One case had a history of the abuse of tobacco.

XI. One case had a head injury but had also a history of the abuse of alcohol.

XII. One case had right-sided hemianæsthesia.

XIII. One case had hystero-epilepsy.

XIV. In 3 cases the cause was unknown.

There were 30 cases, in addition to those above enumerated in which there was loss of the power of accommodation, as well as of the pupillary reflex (ophthalmoplegia interna).

These cases are classified as follows:

(1) Syphilis 8 cases, 6 unilateral and 2 bilateral.

(2) Tabes 3 cases, 1 bilateral, 3 unilateral.

(3) General paralysis, 1 bilateral, 1 unilateral.

(4) Trauma 2 cases, both bilateral.

(5) Chill (exquisite Erkältung) 1 case, unilateral.

(6) Commencing tubercular meningitis (?) 1 case, bilateral.

(7) Cerebral tumor (?) 1 case.

(8) Cause unknown 12 cases, 7 bilateral, 5 unilateral.

Syphilis is much the most common cause of this affection, and the impairment of functions is almost always unilateral, in one of the above cases in which it was bilateral, the second eye was affected years after the first. When a history of the date of the infection could be obtained, it was, as a rule, seven or eight years before the appearance of the ophthalmic symptoms. The cases in which the cause was unknown, occurred chiefly in young people and was transient in its duration.

CATARACT IN GLASS-WORKERS.

In the course of two years, Meyhöfer[5] observed four cases of cataract in glass-workers under thirty years of age, healthy in all other respects. This led him to the examination of five hundred glass-workers, all of whom were engaged in glass-blowing or other work which kept them in the immediate neighborhood of the open furnaces. Fifty-nine presented cortical opacities of the lens, forty-two of these being under forty years of age. The left eye was much the most frequently affected, this side of the face being the one generally more turned toward the fire. In none of them could be discovered any disease of the fundus which could be regarded as cause, or as complication, of the cataract. The only general disease hitherto recognized as a cause of the early formation of cataract is diabetes. But this, according to the testimony of physicians practising among glass-workers, is not specially prevalent among them, and in the eight cases whose urine Meyhöfer was able to examine, he found no sugar. The author is of opinion that the cause of the cataract is the intense radiant heat from the open furnaces, and the consequent profuse sweating to which the men are subjected. The left side being especially exposed to the direct heat, explains the greater prevalence of cataract in the left eye.

INTRA-CAPSULAR IRRIGATION IN CATARACT EXTRACTION.

At the Ophthalmological Society of the United Kingdom, in October, 1885, McKeown[6] read a paper on this subject. His method consisted essentially in the substitution, in the operation of extraction, of washing out of the cortex for pressing, rubbing, and scooping out. He made a small, flap section of the cornea, and iridectomy. After lacerating the capsule freely and expelling the lens, if any cortex were left behind, he introduced a scoop-syringe well within the capsule and gently injected distilled water of the temperature of about 100° F., making gentle motion at the same time with the scoop, to facilitate removal. He had used the scoop-syringe, in all, thirty-nine times. In

[5] Klinische Monatsbl. für Augenheilkunde, February, 1886.

[6] Ophthalmic Review, November, 1885.

one case only was there irido-choroiditis with complete closure of pupil; in one, insidious iritis, beginning after discharge of the patient from the hospital; in a syphilitic subject, severe iritis, arrested by treatment. In no case suppuration of eye or cornea; in none escape of vitreous from use of the syringe. In a few cases, some iritic adhesions, causing no pain or diminution of vision. In twelve cases the cataracts were unripe, and in several the cortex very sticky. There was only one inflammation in the last thirty cases, and that in the syphilitic subject referred to. There were two cautions to observe: first, after iridectomy, to get the blood out of the anterior chamber as quickly as possible; secondly, to be careful to introduce the scoop within the capsule. The operations were all done without chloroform, and some of the patients were restless. The conclusions which he thought he might draw from his own experience were: (1) that the judicious injection of water within the capsule of the lens was innocuous; (2) that it was not liable to cause loss of vitreous; (3) that it was advantageous, both in ripe and unripe cataracts; (4) that it shortened the average duration of cataract operations; (5) that it was a most efficient means of cleaning the wound.

Wicherkiewicz [7] states he had, for years, the idea that unripe cataracts might be completely removed at one sitting by division of the anterior capsule and washing out. As narcosis seemed necessary for such an operation, however, and he always operated on cataracts without an anæsthetic, it was only after the introduction of cocaine that he employed the method. To obtain more constant and steady irrigation than by a syringe, he had made a glass globe with two spouts, the one short, to be closed by the finger of the operator till the proper moment, the other long, curved, tapering, and terminated by a silver canula with small opening at its tip. After opening the lens capsule and pressing out so much of the lens as comes readily, the canula is introduced, the finger removed from the larger spout, and the fluid allowed to flow into the eye until the lens substance is thoroughly removed, then the canula withdrawn while the stream is still flowing. The fluid used has been a one or two per cent. solution of boracic acid, boiled, and cooled to 30° C. Wicherkiewicz had operated in eighteen cases, but does not give the statistics, because the number is too small to draw safe conclusions from, but is convinced that the method is of advantage. He has employed it for unripe senile, traumatic, and zonular cataracts. In one case, carbolic-acid solution was introduced by mistake (strength not given), and although it washed out the lens substance, it caused considerable pain and inflammation, but the case eventually did well.

TRANSPLANTATION OF THE CORNEA.

Von Hippel [8] showed a patient at the Medical Society of Giessen, in whom a better result had been obtained than in any case hitherto reported. Governed by the supposition that the opacity which had supervened in all previous cases of corneal transplantation was possibly caused, in part, by the rapid development of vascularization from the edges of the wound, in part by the action of the aqueous humor on the corneal tissue, he operated in a manner designed to exclude the influence of these factors. The patient had a central, non-adherent leucoma of glaring white color, which did not extend through the whole thickness of the cornea, but left the membrane of Descemet free. To the outer and inner side of the leucoma there was diffuse opacity of the anterior layers of the cornea, in which, from either side, a fine vessel ran toward the centre. Fingers could be counted at two metres with excentric fixation. The leucoma was circumscribed with a trephine, and the corneal opacity removed, layer by layer, with forceps and knife, close down to Descemet's membrane; then, with the same trephine, a piece the whole thickness of the cornea was removed from a rabbit, and placed in the cavity left in the human eye. Under an iodoform bandage, union occurred without any reaction, without vascularization or swelling of the transplanted piece, and up to the time the patient was shown, four weeks after the operation, the graft had maintained its normal transparency. Vision, with central fixation, was then 20-200, and there was a great improvement in the appearance. A foot-note states that four months later, five months after the operation, vision was still unchanged.

IODOL IN DISEASE OF THE EYE.

Glässner [9] has employed in various diseases of the eye, iodol, a substance which has been proposed as a substitute for iodoform. It is said to lack the poisonous properties of iodoform, and possesses the further advantage that it is almost odorless. The preparation used came from Kalle & Co., in Biebrich, and had the form of a light brown powder. Glässner applied it both as a fine powder, and also with vaseline as a one-third per cent. salve. In ulcers of the cornea and hypopion-keratitis, powdered iodol acted as well as iodoform, although, at first, the evidences of irritation were somewhat greater. In phlyctenular and trachomatous panuses, application of a two per cent. salve rendered good service; it also caused rapid absorption of superficial corneal opacities. In a case of obstinate iritis serosa, with marked opacities on the posterior surface of the cornea, which had continued in the same condition nearly four weeks, application and rubbing in of iodol salve brought about clearing and improvement of sight in a few days. No beneficial effects were observed with phlyctenulæ of the conjunctiva, either from the powder or the salve. In the later stages of granulations, iodol salve seemed to hasten the healing, and blepharitis healed promptly under treatment by it.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

E. M. BUCKINGHAM, M.D., SECRETARY.

May 10th, 1886, the President, Dr. F. W. Draper, in the Chair.

URETHAN IN CHOREA.

Dr. Abbot referred to the case of chorea which he had spoken of at the previous meeting, and said he had heard from the father of the child that it was rapidly recovering at the present time. Urethan had been used merely as a hypnotic, with the most satisfactory result. The general course of treatment in the case he had not learned.

[7] Klinische Monatsbl. für Augenheilkunde, November, 1885.
[8] Berliner Klin. Wochenschrift, 1886, No. 20, p. 331.
[9] Centralbl. für pract. Augenheilk., January, 1886, p. 16.

VANILLA POISONING.

DR. B. F. DAVENPORT said that he wished to call the attention of the Society to the possibility of poisoning by the use of vanilla extract as a flavoring. Instances of this kind have been reported in the *Pharmaceutical Journal* of London, for 1874, and mention made of them by Dr. Abbot in the BOSTON MEDICAL AND SURGICAL JOURNAL for November 8, 1883.

Within about six months, he had himself met with three cases of it. In the first case, a family of some six persons were taken suddenly sick with severe symptoms of gastro-entroritis, and that in relative degree, as they had severally partaken of some vanilla ice cream at the preceding meal. In the second case, at a Sunday School festival, where vanilla ice cream had been served, some thirty persons who had taken it were likewise affected, but no one was taken ill who had not partaken of this particular cream. In the third case, which occurred yesterday, all the members of three families, who had eaten of a certain baking of cream pies from a neighboring bakery, were all taken severely and suddenly ill with symptoms of gastro-intestinal irritation, those who had eaten more largely, apparently, even dangerously so, for they became so collapsed that the attending physician administered injections of brandy and ammonia, fearing that death was about to ensue.

In each of these three cases the vanilla was from a freshly-opened bottle of extract from reputable makers, and, so far as any chemical examination could show, nothing was amiss in the sample. The reason that vanilla occasionally produces such violent symptoms is at present merely a matter of conjecture, for nothing definite is known about it. Elaborate chemical investigations, however, have proven the absence of metallic poisons in most of the cases reported, and in no one case has any other known efficient cause been found to account for the symptoms presented.

The speaker had, however, some suspicion that the presence of some product of incipient decomposition in the articles which had been flavored with the vanilla, may have been the really active cause in producing the symptoms which have been presented by all the recorded cases.

DR. E. G. CUTLER read a paper on

IODOFORM POISONING.[1]

DR. JOHN HOMANS said that he had listened with much interest to Dr. Cutler's paper, and that it is one, like all his other writings, of great practical value. Having been puzzled lately to account for the appearance and persistence of nervous symptoms in a man with a compound fracture of the leg, he asked, as he had often done when in doubt in regard to diagnosis, counsel of Dr. Cutler. He described the symptoms, and the mental and physical condition of the patient, and Dr. Cutler at once asked if iodoform was used as a dressing. Being told that it was, he said that he thought it very probable that the iodoform might be the cause of the delirium, emaciation, and feebleness. He suggested that potash had better be given internally, and that if the loss of flesh and strength continued, that transfusion of a solution of potash had better be done. It should be said that iodoform has been very freely used at the hospital as a dressing during the last two years, and the box of yellow powder, with the camel's hair brush, and the hard rubber instrument for insufflation, are familiar sights in some of our wards. Indeed, dressing with iodoform has been the routine practice, and every fresh and old wound has been dusted with it.

The patient is a man forty years old, brought to the hospital on February 13th, 1886, with a compound fracture of the lower third of the left leg. On entrance, the bones were wired together and iodoform was dusted over the wound. During the next twelve days the leg was dressed seven times, iodoform being dusted on each time. At each dressing, a camel's hair brush was dipped in the iodoform once or twice, and then shaken over the wound. On February 24th the leg was wired again, as the first wire had broken. On February 28th the iodoform was omitted, and a drip of carbolic acid solution was substituted (1-100). At this time the leg and foot were much swollen, and collections of pus were found and opened. On March 9th the drip was given up, and the leg, on which there was a granulating surface about the size of the palm of the hand, was enveloped in a large flaxseed poultice.

By March 17th, the swelling had greatly diminished and the sloughs had separated. A dressing of dry, carbolized gauze, charpie, and myrrh, with iodoform dusted on the granulating surface, was now employed. During the next six weeks (or about six weeks) the leg was dressed in this way seven times. Eleven days after the renewal of the iodoform, that is, on March 28th, the patient began to be delirious, and to talk at random. This state of things increased until he became insane. On April 2d he removed his splints whenever he was not watched, and was completely insane and demented, but still, when he was censured for taking off or disarranging his splints and dressings, he would weep and hope that his actions were not considered intentional.

On April 3d all drugs and stimulants internally were discontinued. On April 4th he was more delirious, excited, and enraged, saw foreign bodies and animals, said his wife had been insulted, slept almost none at all, and was very restless.

April 5th. Wanted to be taken home, and would ask if the carriage was ready. He was given bromide of potash, twenty grains every two hours, and this was continued through the daytime for two weeks. During this time the patient was more quiet and slept considerably, but when awake had subsultus, and there were sordes on the tongue and teeth. He was now very weak and emaciated, and at times passed his urine involuntarily. He was given large quantities of milk, eggs, and stimulants. He spoke incoherently, had muttering delirium, and was, in short, in the condition we call "typhoid." At this time his urine was examined at the Medical College, and had a specific gravity of 1036, a slight trace of albumen, oxalate-of-lime crystals, and a few hyaline casts; no sugar.

On April 24th he seemed somewhat improved, though he still tried to get out of bed, and was very obstinate at times, and at other times frightened and timid, though quieter and more intelligent, but he still talked about going to places which his attendants had never heard of.

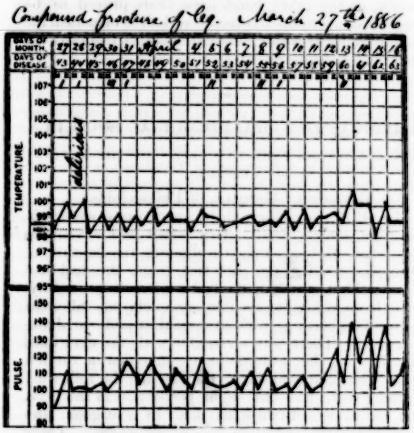
On April 26th Dr. Cutler saw him. When the dressings were removed from the leg, a healthy, granulating, dry surface, about two inches long, was seen, and on this rested a yellow dust of iodoform. In the urine, Dr. Cutler got a reaction of iodine with starch, but the house-surgeon did not succeed in getting this

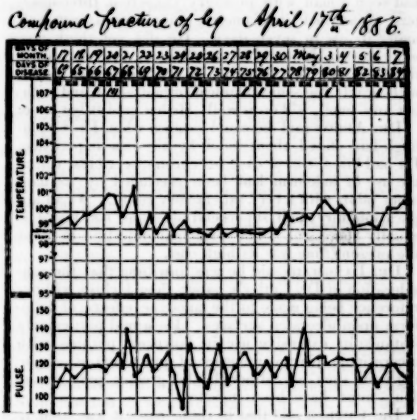
[1] See pp. 73 and 97 of this Journal.

subsequently in later specimens. Carb. of potash in ten-grain doses was given every two hours, and later, the acetate was substituted. During all this time of debility, emaciation, and delirium, the leg has done remarkably well, in spite of the fact that he broke the wire out of the bones. He is now (May 10th) clearer and brighter, and is rapidly gaining flesh and strength. He is saner than he was, but he [2] is still crazy, and no hour goes by that he does not make an insane remark or express an insane delusion.

Here is a man with a severe injury, gradually improving locally, and gradually and slowly becoming more and more delirious; then insane, then stupid, emaciating, growing weaker, getting into a typhoid condition; and all this time his wounds are healing, and all the organs of his body, except his brain, working well. Iodoform has been used as a dressing, and its known poisonous effects resemble exactly those of my patient. The diagnosis is certain and positive, I think.

The following are the temperature charts of Dr. Homans's patient: —





DR. BRADFORD mentioned a case which occurred in a woman with cancer, who was peculiarly susceptible to drugs, her urine having been made smoky by carbolic acid applied to her cancer before operation. A large part of the breast was removed, together with glands from the axilla. There was collapse at the time of operation, but she recovered. Her temperature did not go up to 101°, but, excepting for this low temperature, she had typhoidal symptoms. The pulse was 150 and soft, respiration rapid, and there was delirium. All this time the wound was doing well. The dressing was changed to corrosive sublimate and boracic acid gauze, and in a week she was clear in mind. This is the only well-marked case seen by Dr. Bradford in his service at the City Hospital, and at the Childrens' Hospital, but he may have overlooked mild cases. Four years ago Dr. Fifield reported a severe case.

DR. GAY said that he had used iodoform very freely during the last two or three years, and had seen one case of poisoning. This was in a woman with cancer of the cervix, and whose dressing, iodoform on a cotton plug, was applied by her daughter. She had headache, loss of sleep, and nausea, but no delirium. Iodoform is a dressing that he never applies to large granulating surfaces, for which he at present prefers carbolic acid. The wound is covered with gauze, which is dusted with iodoform. Over this, if necessary, is placed oiled silk and gauze over that, the edges being dusted with iodoform. He believes that with this dressing there is no danger, and has used it, where from the debility of the patient, he would not dare to take risks. He mentioned a man who had been impaled in an accident, having a wound extending from the great trochanter to the spine of the pubes. This was packed every day or every other day with iodoform gauze. Here was a case which seemed a favorable one for poisoning, because of the extent of the surface exposed, but, in fact, no poisoning occurred. He remembered dusting iodoform on several large wounds before he knew how to use it, and he believes that, like carbolic acid, some few people are quite susceptible to it, but that in a large majority of cases it is capable of being made of great value.

DR. H. W. CUSHING, present by invitation, reported a case of necrosis of the femur for which the great trochanter was chiselled out at the Carney Hospital and the wound packed with iodoform-ribbon gauze, over which was placed a corrosive sublimate dressing. Everything went on well for three days when, although the wound continued to do extremely well, there were severe nausea, vomiting, with typhus symptoms, including delirium of a peculiar kind, the patient being coherent to the surgeon and the house-surgeon but not to others. The temperature rose to 102° to 103° on the third day, and remained there until the sixth, when it rapidly fell to 99° in the course of two days, the fall beginning at the time when carbolic acid was substituted for iodoform. Death occurred on the ninth day. On the other hand, he had

[2] Since the case was reported, the man has entirely recovered and has gone home well.

made a wound six inches long, and a third to a half inch wide in the abdomen of a dog, and packed it out of sight in iodoform for four or five days, without getting the symptoms of this paper.

DR. GREENOUGH said that he had used iodoform largely in the treatment of soft chancres during nine years, and had seen no ill results. He should be sorry to think that it was a dangerous drug, but he did not have so large surfaces to deal with as come into the care of general surgeons. It is very valuable for controlling suppuration and for promoting cicatrization. He had seen a man with an angry chancroid, three-quarters of an inch in diameter, quite recently get well under its use in seven days. He did not think any other treatment would be so efficient. A great objection to its use is its smell. It is claimed that iodol, with nearly the same chemical organization, and without any smell, will do as well. He has used it but once.

DR. ABBOT said he could confirm what Dr. Greenough had stated about iodol by his own experience. He had used it in a case of chronic cervicitis, where the use of iodoform had been precluded by its nauseous odor, with a very satisfactory result. As an application for small superficial ulcers he had found it equally successful. The principal objection to it at the present time was its high cost.

DR. LANGMAID said he was unwilling that the consideration of Dr. Cutler's paper should close without reference being made to the anodyne effects of iodoform upon ulcerated surfaces. He would particularly instance its extensive use in laryngeal phthisis with ulceration. He was unaware of any report of poisoning from such use, although the greater part of the drug must have been ingested.

DR. CUTLER said that in these cases it was used in just the proper way, a thin layer being blown upon an ulcerated surface. His table shows two cases of poisoning by the internal use of the drug, and one in laryngeal insufflation.

Dr. Cutler did not wish to be understood as deprecating the use of iodoform, he was second to no one in his high regard for the drug in its legitimate sphere, which was an application to fresh wounds or unhealthy or diphtheritic surfaces. As was remarked by Dr. Greenough, it was one of the best promoters of healing and of healthy granulation formation which we possess, but beyond a certain point its action was liable to be harmful. As soon as the surface was healthy, or granulating, the time had come for leaving off the iodoform and using some other innocuous substance, for the reason that the action of iodoform, as shown in the table of cases referred to in the paper, was not under our complete control and was liable to make itself apparent at a remote period. If the views of the observers quoted in the paper as to the absorption and ultimate fate of iodoform in the system are correct, it is evident that there is a liability to poisoning in the continued use of iodoform in all cases where a considerable hæmorrhage or other exhaustive drain on the patient has occurred. According to the theories, only that part of the iodoform proves poisonous which fails to enter into combination (as iodine) after absorption. A certain amount of iodoform is eliminated by the kidneys and other secretions as such, this presumably has no poisonous action. In the case mentioned by Dr. Gay, the conditions were the least favorable for poisoning, the gauze dressing being the one of all others from which little or no symptoms are apt to arise. The iodoform adheres to the dressing; it cannot be applied in any great quantity, and it does not come in such close connection with the tissues as in other forms, so that absorbtion is less liable to occur. The symptoms of iodoform poisoning are very like those of poisoning by iodine; one observer (Behring) has tried to divide cases according to their symptoms into true iodoform and iodine cases: this seems at present to be premature, at least. The potash compounds have been found to be non-poisonous in the blood, the soda compounds, on the other hand, have been proved to be poisonous, and in the exhibition of iodide of potash the symptoms, as we know, are quite distinct from any we have seen in iodoform.

AMERICAN OPHTHALMOLOGICAL SOCIETY.[1]

THROMBOSIS AND PERI-VASCULITIS OF THE RETINAL VESSELS,

by DR. GEORGE C. HARLAN, of Philadelphia.

Mrs. F. B., age thirty-three years, came under observation June 5, 1886. Her father and a younger sister had died of Bright's disease, the mother of paralysis. During the past two years, she had had considerable headache. She had a miscarriage in July, 1885, from which her recovery was delayed. She had a second miscarriage without special trouble in January, 1886. There was no trouble with the eyes until May 7, when she noticed dimness of vision in the left eye. This increased during the day and the following morning there was only light perception in this eye. She was examined two weeks later by a surgeon, who pronounced the condition one of embolism. There was no suspicion of specific disease. There was no uterine trouble and the heart sounds were normal. The urine had a specific gravity of 1009, contained some albumen, but no tube casts were found. Examination of the eyes showed no light perception in the left eye. The media were clear. There were hæmorrhages scattered through the retina. Some were striated, extending in long streaks along the vessels. There were three groups of white spots at the macula. With one exception all the vessels of the retina were converted into white bands. The exception was a small artery having an independent origin. The vessels were of nearly normal size. Five or six weeks later, the hæmorrhage had been absorbed, but there were no other changes. In the right eye there were several small hæmorrhages and two filmy white patches. These subsequently disappeared. In July, she had a slight attack of paralysis on the left side and examination of the urine showed some albumen and hyaline tube casts. The rapid onset and the occurrence of blindness within a few hours seemed to exclude the possibility of disease of the vessels. Embolism would not account for the condition. The speaker suggested that the partial blindness for the first few hours was due to hæmorrhage, and that the complete blindness coming on later, was due to thrombosis. Thrombosis of a whole series of vessels is however rare. Another possible explanation is that there had been for some time disease progressing in the outer walls of the vessels without giving rise to sufficient disturbance of vision to attract attention.

[1] Continued from page 90.

By way of comparison a second case was described in which the affection seemed to be a peri-vasculitis. It was that of a negro woman who had been partially blind for a long time. The right eye was the seat of a dense cataract. In the left eye V=20–100. The lens was hazy and the disk pale. Extending upward there was a large artery converted into a chalky band. Two smaller arteries exhibited the same condition in places.

A NEW TEST-TYPE,

by DR. WM. S. DENNETT, of New York.

The speaker called attention to the fact that although for twenty-five years the schools of the civilized world had been under the observation of oculists who all agree that great good would be done by periodical examinations of the eyes of scholars and although such examinations were very simple, the internal inertia of existing institutions had always prevented any continued action on the part of the schools. Among the laity there is absolutely no knowledge of what normal eyes should be expected to see. A card was presented which was designed for the use of educational institutions. It contained one set of letters and a statement underneath of the exact distance at which these letters should be seen. The desire was expressed that this or some similar card should be placed on the wall of every school-room in a conspicuous place so that it should become of necessity a familiar object and a standard of measurement that would be remembered through life.

THE POSSIBLE RETARDATION OF RETINITIS PIGMENTOSA IN THE YOUNG,

by H. DERBY, M.D., of Boston.

This affection is, as a rule, considered incurable, leading gradually to complete blindness. In America, the disease is exceedingly infrequent, the author having seen it but twenty-seven times in thirteen thousand eye cases. In 1881, a boy, three years of age, was brought to him from Western Virginia. It was observed that toward night vision diminished. There was no history of blindness in the family. Five years later he came again, accompanied by his sister, seven years of age; both children were night blind and presented the evidences of retinitis pigmentosa. Under the use of the constant current, there was improvement. A similar case of improvement under the use of the constant current, under the care of Dr. Standish, was reported.

The object of the paper was to invite discussion as to the use or non-use of such eyes for educational purposes and as to the possibility of adopting measures for delaying the progress of the organic change.

A third case, that of G. W., aged fourteen, was described. He presented the typical appearances of retinitis pigmentosa. Non-use of the eyes and the application of the constant current was recommended. He was subsequently advised by others to use the eyes freely. In five years vision diminished from three-tenths to one-tenth. This rapid progress of the disease it was thought, might have been aided by the use to which the eyes had been subjected.

DISCUSSION.

DR. WILLIAM S. LITTLE, of Philadelphia. In one case of retinitis pigmentosa occurring in a deaf mute, I have seen decided improvement in vision under the use of the faradaic current. The improvement continued for two years without change. He then went west and seven years after the applications, he was doing well, but he could not see quite as well at night as before.

In two cases coming to the Jefferson College clinic, the pigmentation had progressed so far that the vitreous also continued black. This I had never seen before.

DR. L. WEBSTER FOX, of Philadelphia. I have had the opportunity of treating a number of cases successfully. I have found that it was the negative pole that produced the good results. I also noted that if there were no enlargement of the field after three applications, improvement was not to be expected. In all the cases in which improvement took place, the bloodvessels seemed to increase in calibre and the night blindness correspondingly diminished.

DR. GEORGE C. HARLAN, of Philadelphia. I have recently seen two well-marked cases of this affection, one in a boy of seventeen years, and the other in his sister, a few years older. My faith in any form of treatment being slight, I advised that the eyes be used as long as sight remained. From the cases which I have seen, I think that there is likely to be a culmination of the disease about puberty.

DR. GEORGE STRAWBRIDGE, of Philadelphia. I should like to add a word. I tried the use of electricity in this affection thoroughly, some ten years ago. I did not obtain benefit in a single instance. I place more reliance upon the occasional use of alteratives as bichloride of mercury and iodine of potassium, looking on these cases as probably of syphilitic origin.

DR. SAMUEL THEOBALD, of Baltimore. I have had no experience with the use of electricity in retinitis pigmentosa, I have, however, seen temporary improvement from the continued use of phosphate of iron, quinia, and strychnia. One of these cases was seen when eight years of age, some ten years ago. He retains sufficient vision to enable him to perform his duties as a travelling salesman. There was no intemperance of the parents of this patient, but there was a history of a similar trouble in other members of the family.

DR. S. D. RISLEY, of Philadelphia. It has seemed to me that with the hypodermic use of strychnia, I have secured improvement in the central sharpness of vision. I have frequently seen improvement follow the use of this drug, but as far as I know, it has never been permanent. As regards the age at which the affection may develop, I have seen it in two children of the same family, occur under five years of age.

I wish to mention another fact. A young man consulted me with retinitis pigmentosa, with marked contraction of the field, and asthenopia, principally due to hypermetropic astigmatism. He was treated with alterative remedies for two years, during which time the difficulty had not materially increased. To relieve the asthenopia I ordered a weak solution of eserine, sufficiently strong to contract the pupils without causing peri-orbital pain. Under its use vision decidedly improved. He has used this solution more or less constantly for the past two years, and finds that when he is without it he is distinctly more uncomfortable.

DR. O. F. WADSWORTH, of Boston. I wish to refer to one case which in connection with those reported, shows the variable course the disease may pur-

sue, when left to itself. A young man twenty-four years of age, a divinity student, was seen in 1873, presenting typical retinitis pigmentosa, so far as the ophthalmoscopic appearances were concerned. He had well-marked night blindness. His field was only one and one-half inches in diameter at the distance of a foot. He was reading German and Hebrew without discomfort. He continued his work and I saw him eight years later. Vision was the same, but the visual field seemed to have decreased to a slight extent.

THE EQUIVALENCE OF CYLINDRICAL AND SPHERO-CYLINDRICAL LENSES,

by Dr. Edward Jackson, of Philadelphia.

The paper was intended to demonstrate the laws of such equivalence, showing that equal crossed cylindrical lenses are optically equivalent to a spherical lens of the same refractive power. Crossed cylinders of unequal refractive power may be regarded as crossed cylinders of equal refractive power combined with a third cylindrical lens, or as their equivalent, a spherical combined with a cylindrical lens. It was proven that any two cylindrical lenses with their axes placed obliquely, the one to the other, might be represented by crossed cylinders, that is, cylinders with their axes perpendicular to one another, or by their equivalent in the shape of a sphero-cylindrical lens. Hence that any number of cylindrical lenses with their axes placed in different directions are optically equivalent to a single sphero-cylindrical lens. To determine the sphero-cylindrical equivalent to any two cylindrical lenses, construct a parallelogram, two sides of which are proportional to the refractive power of the given lenses, the angle included by these sides being double the angle made by their axes. Then the diagonal which cuts this included angle, will be proportional to the cylindrical portion of the desired equivalent and to get the spherical portion it is only necessary to subtract one-half of this cylindrical equivalent from half the sum of the cylinders given.

DISCUSSION.

Dr. William S. Little, of Philadelphia. With reference to the practical side of this question I may say that in about one-half of my cases of mixed astigmatism, the patients have preferred crossed cylinders to their equivalent sphero-cylinder. In using a sphero-cylinder it is essential that it be accurately centred.

Dr. G. Hay, of Boston, read by title a paper on

THE COMBINATION OF CYLINDER LENSES.

The committee to whom was referred the consideration of the proposition with reference to the organization of a Congress of American Physicians and Surgeons, reported the following resolutions and recommended their adoption:

Resolved, that a committee of five be appointed by this Society and be authorized to confer with committees from other medical societies with regards to the organization of a convention or congress of such societies and report at the next meeting of this Society.

Resolved, that it is the sense of this Society that its welfare would be put in peril by any alliance or co-operation which would interfere with its autonomy or independent meeting.

These resolutions were adopted and the following committee subsequently appointed:

O. F. Wadsworth, Boston; C. S. Bull, New York; George C. Harlan, Philadelphia; Samuel Theobald, Baltimore, and B. E. Fryer, Kansas City.

Adjourned until three o'clock.

AFTERNOON SESSION.

The first paper of the afternoon session was a report of

TWO HUNDRED AND SIXTY-THREE CASES OF CATARACT EXTRACTION WITH PARTICULAR REFERENCE TO THE AFTERTREATMENT,

by George Strawbridge, M.D., of Philadelphia.

Two hundred and twenty-three of the above cases had never been reported. The operation was performed by the modified flap extraction in which the incision lies mid-way between the old Græfe incision and the corneal flap incision. It avoids the risks of both of these methods and gives a sufficiently large opening. An iridectomy in an upward direction was always performed. Formerly the lens was removed by pressure with the spoon directly on the cornea, but fearing injury to that tissue, during the past year, pressure with the finger on the closed eye-lid had been substituted. The results had been as follows: successful cases, 85.2 per cent., partial successes, 8.1 per cent., and failures, 6.7 per cent. Those cases were classed as failures in which fingers could not be counted at a distance of one or two feet. In twelve cases absolute loss of the eye occurred. These were lost by choroiditis with one exception, which was due to choroidal hæmorrhage.

After the operation the eye was thoroughly cleansed and for the past two years a solution of boracic acid (two per cent.) had been employed. The speaker's former plan had been after applying a bandage to put the patient to bed in a darkened room, keeping them in bed for four to six days. Two-thirds of the cases had been treated in this way. He had found this plan exceedingly debilitating in elderly individuals, and during the past eighteen months he had gradually given up this plan so that during the past six months, the patients were, practically speaking, kept in bed only twenty-four hours. The room is as light as any ordinary room, the first element in the treatment of old people is to make them comfortable. If at the end of twenty-four hours, everything is doing well the patient is allowed to move about the room. No unsatisfactory result had followed this plan.

The speaker had employed in some cases cocaine. In one case in which a four per cent. solution was used a violent purulent inflammation began within twenty-four hours and resulted in total loss of the eye. Subsequently he had employed it without unpleasant results. His plan is to use a two per cent. solution, drop in one drop, wait a minute and drop in a second drop and use only two drops. As much anæsthesia as is desirable is thus obtained. He had never employed any antiseptic except the two per cent. solution of boracic acid, and while this does no harm he thought that it did little good.

He attaches much importance to stimulation after the operation in elderly people, the use of whiskey is begun a few hours after the operation.

(To be continued.)

Medical and Surgical Journal.

THURSDAY, AUGUST 5, 1886.

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SCARLATINA AND MILK.

THE English Local Government Board has issued an important pamphlet, now before us, containing papers, on certain observed relations between scarlatina in London and milk from a dairy farm at Hendon; on the anatomy and pathology of the disease observed among the cows of the Hendon Farm; on the signs and symptoms of a disease observed among the cows of the Hendon Farm. Of these papers the first two are reports made to the Board, at its request, respectively by Mr. W. H. Power, one of its most competent inspectors, and by Dr. E. Klein, of the Brower Institution, London; the third paper is a portion of a communication read at one of the meetings of the British Epidemiological Society by Dr. James Cameron, local medical officer of health at the town of Hendon. These papers are preceded by an introductory report by the medical officer of the Local Government Board, Dr. George Buchanan; and taken together they constitute one of the most valuable contributions made for some time to our knowledge of the relations between infectious diseases in man and in animals. It is not too much to expect that as a result of these investigations additional checks may be applied to the increase and distribution of so common and dangerous an epidemic disease as scarlet fever, or that possibly a method of inoculation against scarlet fever as effective as vaccination against small-pox is about to be placed in our hands.

In the development of modern sanitary science and preventive medicine, each year shows more clearly the intimate hygienic dependence of man upon his animate and inanimate surroundings. Methods, previously unsuspected though in frequent operation, for the distribution of the poisons of infective diseases are being demonstrated. Among such none have been more frequently or clearly incriminated than milk-supplies, and milk has been proved a most effective medium for the cultivation of these disease germs.

The English Local Government Board, through its accomplished health officers and inspectors, has been a pioneer in these investigations of the relation between local milk-supplies and epidemic outbreaks of typhoid fever, diphtheria and scarlet fever. In no less than fifteen instances one or other of these diseases has been shown upon sufficient evidence to have been distributed with the milk service of the families invaded. In the scarlatina outbreaks it was at first supposed that the milk had been infected by human agency, but a more exact study of successive epidemics caused a distrust of this explanation, and a suspicion that the milk was in some way infected by the cow.

In 1882, Mr. Power investigated and reported on a scarlet-fever epidemic distributed with a certain milk-service. In this instance two facts were established: "the one, that a cow, recently come into milk had been suffering from some ailment, seemingly from the time of her parturition, of which loss of hair in patches was the most conspicuous manifestation; the other, that there existed no discoverable means by which the milk, which had coincided with scarlatina in its distribution, could have received infective quality from the human subject." It was not possible, however, to establish a relation between ailment of any particular cow and the disease spread from the farm furnishing the milk. At this time Dr. Klein — at the instance of the Board — made some experimental observations as to the susceptibility of animals to human scarlatina which convinced him that a definite disease was producible in the cow by means of scarlatina-infection, producible most readily when the cow was in milk — and that this disease was communicable from one animal to another by inoculation.

As a result of these investigations in 1882 a presumption merely was established that the epidemic of scarlet fever established by a certain milk-supply was the consequence of a malady in certain cows, and here the matter rested.

In December, 1885, the medical officer of health of Marylebone, London, reported a sudden and extensive outbreak of scarlatina that appeared to be associated with the distribution of milk from a particular retailer who derived this supply from a dairy farm at Hendon, though the sanitary circumstances of the farm itself, and the health of the employés, proved upon inspection remarkably good. Mr. Power was detailed to make inquiry into the whole case, both in London and at Hendon. In due course the point was reached of excluding external scarlatina, of associating the importation of particular cows into the Hendon farm with presence of scarlatina in London districts, and of connecting by a series of parallel events, the milk furnished by those cows, and related cows, with the peculiarities of scarlatina prevalent among consumers of the Hendon farmers' milk. Subsequently it was learned that the suspected milk, which was ordered by the inspectors and the farmer to be thrown away, had been actually consumed by some poor families who begged it from the farm laborers; its consumption being followed after the usual interval by an outbreak of scarlatina. Still later it was proved that the infectiveness of the milk from a certain shed in the dairy farm coincided with the introduction of cows having

diseased appearances — vesicles and ulcers — about the udders and teats, with a loss of hair from the tail and back particularly, in some instances, and that the infectiveness of the milk of cows in other sheds corresponded with the transfer of the diseased cows to the other sheds or the development of the same conditions by other cows.

The inquiry of Mr. Power rested at this stage, and afforded strong circumstantial evidence that a constitutional disease existed among the cows of the Hendon farm competent to produce scarlatina among human consumers of the cows' milk.

The special features and pathology of the disease were described and studied by Drs. Cameron and Klein. Dr. Klein's study of its pathology was made at the request of the Board, and he states the outcome of his investigations as follows: By inoculating the virus directly taken from the local disease (the ulcer on the teats) of the cow into the corium of the calf, the same local disease is produced, namely, a change in the skin, which commences as a congestion of the papillæ and corium, and with exudation of fluid and leucocytes. This leads, in the superficial parts of the epidermis, to the formation of cavities, which ultimately lead to the formation of an ulcer. But the virus, in the form of an artificial cultivation of the streptococcus derived from the above ulcer of the cow, when inoculated into the subcutaneous tissue, that is, when introduced almost directly into the vascular system, sets up a general disease, resembling, to a considerable degree, in its anatomical features, human scarlatina. The changes in the kidney completely coincide with those in acute scarlatinal nephritis in man.

As respects the part that cows' milk may play in the communication of the disease, it appears that the milk, when pure, does not contain the organism, but the milk, during the act of milking, is liable to become contaminated by the fingers of the milker bringing down into the milk particles from the ulceration on the teat, and for such an organism, the milk affords a peculiarly good medium in which to multiply.

The results of the *inoculation* into the human subject of a milk sub-culture, or of the *feeding* of calves with such milk-cultures as appear to have been fed to children, are links still wanting to complete the chain of evidence offered by Dr. Klein; but, as we indicated at the beginning of this brief summary of these interesting inquiries, a point seems to have been reached from which the attainment of practical advantages to humanity may reasonably be anticipated.

BILIOUSNESS.

IT is a pathological law that all organs are liable to excess, diminution, and perversion in their functions. The bile-producing function of the liver is especially prone to undergo augmentation, and the causes which give rise to such excess are frequently operative with some persons, and almost constantly with others. Such causes are generally alimentary, although other influences, such as excessive heat, malaria, and certain animal, vegetable, and mineral poisons may be promotive of inordinate biliary secretion; hereditary predisposition is a powerful determining factor, and there is a certain temperament associated with dark eyes, dark hair and skin, which probably, with no very good foundation, is supposed to belong especially to the "bilious" constitution.

Placed at the very gateway of life, with the special office of elaborating albuminoids and carbo-hydrates before they are fit to enter the circulation and subserve the wants of the economy, the liver has, so to speak, to "work over" all the products of digestion absorbed by the portal vein, and is physiologically influenced both by the quantity and the quality of these aliments. While the ingestion of vegetable matters and cereals caused diminution in the biliary secretion in animals, the subjects of experimentation (experiments of C. S. Schultz), the secretion was increased by albuminoids, and if fat in excess was added to the daily rations, not only was the biliary flow augmented, but coincidently, the cholesterine and other fatty matters of the bile were increased, and the bile had a greenish appearance.[1] Over-feeding, moreover, augmented the flow of bile from the fistula. But this is not all; excess in food or drink in animals under experimentation, as also in Alexis St. Martin, and in Richet's patient with gastric fistula, caused gastro-duodenal catarrh with reflex irritation of the liver, an increased bile production being the result. Here the blood became contaminated with both bile and the crude products of digestion. Clinical experience has abundantly confirmed these experimental observations, and almost everybody has at some time personally suffered from the symptoms due to biliousness from excess of bile production.

If men are prone at all times to errors in diet, such errors are more likely to be committed at the present season, when, according to a popular impression, the dog star exerts its pernicious, depressing influence; when, too, a dietary which might be normal in cold weather would be unnecessary and harmful. Although the activity of all the chemico-vital phenomena is lessened, and the nutritive metamorphoses are slowed, while the diminished craving for food warns against full indulgence, it is, nevertheless, true that the warning is too seldom heeded, appetizers are sought for, albuminoids and carbo-hydrates in abundance are devoured, and the jaded digestive organs are teased to do work for which they have become unfitted.

It must be acknowledged, in this connection, that there has been much confusion as to what is denoted by this word *biliousness*, a word for which our Continental friends have hardly any good equivalent. A person is *bilious* when he is suffering either from excess or diminution of bile production, and the pathology and symptoms of both conditions are not so wide apart as one might at first suppose, for an over-

[1] Bouchardat and Sandras.

stimulated liver eventually becomes exhausted and unable to form bile. This is the way in which Harley explains the connection between over-stimulation of the liver and suspended biliary secretion.

"The first stage of hepatic capillary congestion leading to hyper-secretion of bile leads to a second stage of diminished biliary secretion by pressure of the engorged capillary vessels and bile ducts on the secreting hepatic cells. Hence the bile ceases to be secreted in its usual quantity, the biliary coloring matter and other bile elements remain behind in the circulation, and accumulating there, give rise to the chain of symptoms usually included in the generic name of a bilious attack; sallow complexion, headache, giddiness, disordered vision, sickness, and prostration, these, again, are the results of the toxic effects of the biliary substances on the nervous system. This form of biliousness may be looked upon as a slight or incipient stage of jaundice." [2]

What is commonly known as an acute bilious attack is more properly an acute indigestion, the *embarras gastrique* of the French. A person, we will suppose, has indulged in a surfeit; he has giddiness, frontal headache, and general prostration; there is a furred tongue and a bad taste in the mouth; there is nausea and vomiting, and perhaps diarrhœa. If there be bile in the vomitus and dejecta, it is because the liver has been secondarily disturbed in its functions. In fact, the excessive biliary secretion has been looked upon as salutary, as in fact, an effort to clear the clogged and embarrassed *primæ viæ*. The derangement is gastro-intestinal, rather than bilious. If the liver is involved in every severe irritation of the digestive tube, this is owing to the solidarity which characterizes the functions of all the chylopoietic organs.

If there be headache accompanying these attacks, owing probably to reflex excitation of certain sensory branches of the fifth nerve, it is also true that neurosis of the fifth (migraine) may reflexly excite bilious vomiting, and this accounts for the fact that migraine is often confounded with "biliousness."

The observations made by Dr. Beaumont more than fifty years ago on Alexis St. Martin, must still be cited (as they have recently been by Dr. Lauder Brunton)[3] in explanation of the phenomena of acute biliousness. After excesses in eating and drinking, Beaumont found St. Martin's stomach covered with livid spots and apthous patches; the gastric secretions were mixed with ropy mucus; the digestion was slower than usual, or suspended altogether. A little later the symptoms of biliousness were superadded. The usual appetite was gone, the tongue was covered with a thin yellowish coat. The countenance was sallow and on the interior of the stomach there were several deep-red patches. A muslin bag which had been introduced with some food in order to test the rapidity of digestion, when drawn out was covered with a coat of mucus and yellow bile. On the succeeding day the coats of the stomach were still unhealthy and of a deeper red than naturally, with patches of a still deeper color and the mucous covering abraded in places." This venous congestion indicated stasis in the radicals of the portal vein, and hepatic engorgement. Beaumont, who records several such instances in his book (pages 100, 118, 251–4, 270,) states the benefit which in one instance was derived from a purgative dose of calomel, "which removed all the foregoing symptoms and the diseased appearance of the inner coat of the stomach." On another occasion his patient was restricted from a full and confined to a low diet, and simple diluent drinks, with restoration *ad integrum* of the disordered viscera, and return of health and appetite.[4]

Although the bile acids themselves are sufficient toxic when in excess in the circulation (see experiments of Harley, Feltz and Ritter, Graham, Brown and others), and although it has been proved that these acids in jaundice have a specially depressant effect on the nervous centres, being indeed violent cerebral poisons — whence *melancholy* was anciently attributed, and not without some reason to *black bile*, as the derivation of the word shows — yet *biliousness*, in its common acceptation, is vague and indefinite compound of cholæmia lithæmia and stercoræmia; and as factors in the causation of the morbid syndrome we have mal-elaborated peptones and poisonous ptomaines.

The treatment of biliousness is prophylactic, alimentary and medicinal. Prophylaxis is concerned with avoidance of all the known causes, whether of a toxic, malarial or alimentary character. A plain diet, of bread, milk, oatmeal, vegetables and fruits with lean meat or fresh fish in moderation, and abstinence from alcoholic stimulants seems to be the ideal fare for the biliously predisposed. This kind of diet is especially applicable for hot weather when albuminoids are apt to clog the portal system, and pastries are an abomination, and when a broiled schrode, a little chicken or mutton broth with bread and stewed fruit will make a more healthful meal than the more sumptuous fare of a modern fashionable dining-saloon.

Exercise in the open air is of recognized utility in promoting oxidation and elimination, enhancing the digestive and assimilative processes, and lightening the burdens of the liver. Moreover, exercise (whether by rowing, horseback-riding, gardening, walking) hinders absorption of bile by the hepatic venous radicals, and promotes the passage of that fluid into the duodenum, through the increased compression exerted on the liver by the diaphragm and abdominal muscles; this is in accordance with a recognized physiological law.

The victim of an acute bilious attack will generally get righted in a few days by, first, abstinence from all food, then a diet of porridge and milk, or skimmed milk alone, and a very gradual return to solid food, which for several days should be restricted to toast, a little lean meat, or broiled fish, with some succulent

[2] Harley. Diseases of the Liver, Philadelphia, 1883, p. 192.
[3] Lauder Brunton, Disorders of Digestion, their Consequences and Treatment, London, 1886, p. 27.
[4] Beaumont, Physiology of Digestion, Burlington, Vt., 1846.

vegetables or ripe fruit. As for medicines, saline aperients, such as sulphate of soda, Epsom or Rochelle salts in full doses in the morning, or the now fashionable tumblerful of Hunyadi Janos will generally suffice to clear the *primæ viæ;* the latter has especially a reputation for evacuating bile. The striking relief obtained by free bilious evacuations has often been remarked, and the veteran transgressor resorts to his blue pill or podophyllin with every recurrence of his malady. Of late enonymin has come much into use as a cholagogue.

Harley recommends to persons who seem to have a more than usual tendency to biliousness traceable to sluggish biliary secretion, and where there seems also to be defective nerve action, small doses of nux vomica or strychnia after their meals. This may be combined with belladonna and aloes as in the aloin, strychnia and belladonna pill. The bilious person is generally constipated, hence such a pill has a special utility. Fothergill's pill of ipecac, capsicum, and pil. aloes et myrrh. has done good service in such cases. Nitro-muriatic acid and taraxacum have a reputation which is probably not altogether built on imaginary results. But bilious dyspeptics, while they should be attentive to the functions of eliminations (and doubtless the ancient predilection for purgatives has been justified by modern scientific research which finds in intestinal septicæmias and alkaloids of putrefaction, many of the evils formerly attributed to peccant humors and atro-biliary disorders), should aim especially to be good hygienists and learn to live right, but this is counsel which everybody gives and nobody takes.

POISONING BY IODOFORM.

Consequent upon the rapid and wide-spread adoption of iodoform during the last few years in general surgical and gynæcological practice, a number of cases of serious and even fatal results have been reported. And it is altogether probable that the actual number and instances of poisonous action is much greater than statistics show, from failure of the attendants to ascribe to the true cause some of the outward symptoms of the post-operative condition.

The admirable paper on the subject which we have had the pleasure to lay before our readers in the last and the current numbers of the Journal, gives the particulars of some seventy-seven cases of iodoform poisoning and represents a pretty thorough canvass of the medical literature bearing on the subject.

The symptoms observed in persons engaged in manufacturing processes which involve contact with iodine compounds are not unlike those following the use of iodoform in susceptible subjects. Among them are the persistent taste and smell of the drug, impairing appetite and digestion, headache, sleeplessness and delirium, the latter being usually of a melancholy character, and in extreme cases passing into absolute apathy, with involuntary dejections, rapid feeble pulse and progressive marasmus. The pulse has often a rapidity out of proportion to the degree of elevation of its temperature, but a moderate febrile movement is not uncommon and after operative cases offers an apparent discrepancy to the aseptic condition of the wound.

The inappetence and the mental depression are among the first symptoms to strike the attention. The danger of these untoward effects seems to depend, apart from idiosyncrasy, on circumstances which hinder the perfect combination of such iodine as is set free in the organism, among those circumstances being blood changes, quantitative and qualitative, and an excessive amount of the drug used. A frequent renewal of the dressing and the maintenance of pressure are factors increasing the chances of iodoform absorption.

The detection of iodine in the urine of the patients suffering with these symptoms and having been exposed to the action of the drug, is absolute confirmatory evidence of the nature of the difficulty.

Fortunately the chemical test for iodine is characteristic and is readily applied. It is a significant fact that some of those operators who use iodoform solely as a disinfectant, although employing it very largely, have had less unfavorable effects following it than those who have combined its use with that of other antiseptics, carbolic acid, for instance. Hence Mosetig-Moorhof offers the plausible theory that the carbolic acid sets up renal irritation, from which the iodoform fails of being properly eliminated and therefore causes toxic symptoms.

MEDICAL NOTES.

— On July 3d, the English Local Government Board issued an order providing that, between that date and November 1st next, "no rags from Italy shall be delivered overside, except for the purpose of export, nor landed in any port or place in England or Wales." This step has been taken in view of the existence of cholera in Italy.

— A gunshot wound of the heart is reported in the *Indian Medical Gazette*, where the patient lived forty-two hours after a bullet had pierced the seventh rib, left lung, left and right auricles, and right lung. Bryant (Circular No. 3, War Dep. Washington) cites a case in which the patient survived a wound of the right auricle for fifty hours.

NEW YORK.

— Sanitary Inspector Goldschmiedt has made a report to the Board of Health on the condition of the old Deborah (Jewish) Nursery, on East Broadway, where there are, at present, sixty children of a more advanced age than those belonging to the new Nursery, situated a few doors away. It will be remembered that some time since, an epidemic of typhus fever broke out in the latter institution, and that, in consequence, all the inmates were transferred for a time to North Brother Island, in the East River, in order that the buildings might be thoroughly cleansed and disinfected. Dr. Goldschmiedt reports that, in making an

inspection of the old Nursery, he found the cellar foul, the plumbing and ventilation defective, and the garret stored with rags and filthy clothes; and he recommends that action be taken to compel the managers to put the premises in a satisfactory sanitary condition, especially as it has been ascertained that the outbreak of typhus in the new Nursery started from a case in this one.

— In consequence of the neglect of the authorities to provide the means for the maintenance of the usual summer corps of physicians for visiting the tenement-house population in their homes, the St. John's Guild has now organized a medical corps for this purpose, who, in addition to prescribing for the sick children met with which are unprovided with attendance, distribute tickets for the Guild's Floating Hospital excursions and the Seaside Nursery. The Sick Children's Mission of the Children's Aid Society also still maintains its tenement-house service, and now has a corps of fourteen visiting physicians. The Mission has had distributed among the poor throughout the city large numbers of printed cards, conveying the information that any family whose means will not admit the employment of a private physician, can obtain one free of charge, by applying at the office of the Superintendent, in East Broadway.

Miscellany.

ORDER TO CUSTOMS OFFICERS IN REGARD TO IMPORTATION OF OLD RAGS.

Acting-Secretary of the Treasury, Fairchild, issued July 27th, the following instruction to Customs Officers in regard to importation of old rags: "All old rags imported into the United States in vessels which have passed local quarantine at the port of importation will be admitted to entry in the same manner as other imported commodities, that is to say, without requiring special permits from health officers as to their landing. The fact that the vessel has passed quarantine will be considered as sufficient evidence that her entire cargo is free from infection." This will put the responsibility for the detention of imported rags upon the local Boards of Health, where it belongs.

NINTH INTERNATIONAL MEDICAL CONGRESS.

Circular No. 2, concerning the Ninth International Medical Congress, to be held at Washington, has been recently received. The Congress, it is proposed, will assemble at Washington, Monday, September 5, 1887, at 12 o'clock, noon, and will consist of such members of the "Regular Medical Profession" as shall have registered and taken out their ticket of admission, and of such other scientific men as the Executive Committee of the Congress shall deem it desirable to admit. A list of the officers of the Congress is given.

REPORTED MORTALITY FOR THE WEEK ENDING JULY 24, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Whoop'g Cough.	Diph. and Croup.
New York	1,439,039	932	569	45.32	11.11	35.99	1.54	4.51
Philadelphia	971,363	435	232	24.61	5.52	17.48	1.15	1.15
Brooklyn	680,000	—	—	—	—	—	—	—
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	211	104	37.60	17.39	31.96	.94	3.29
St. Louis	400,000	175	69	29.00	13.34	4.14	.92	3.22
Baltimore	417,220	187	112	33.92	12.76	26.50	1.59	1.06
Cincinnati	325,000	114	64	34.68	9.68	19.36	1.76	7.92
New Orleans,	238,000	—	—	—	—	—	—	—
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	108	53	23.00	12.98	18.80	1.84	.92
Pittsburgh	190,000	114	72	36.96	4.40	18.48	2.64	2.64
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	43	20	41.94	13.98	30.29	2.64	2.64
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	22	7	18.20	23.75	13.65	—	—
Charleston	60,145	53	28	26.32	11.28	16.92	1.88	—
Worcester	68,383	24	14	50.00	8.32	41.58	—	—
Lowell	64,051	—	—	—	—	—	—	—
Cambridge	59,660	20	9	40.00	10.00	25.00	5.00	10.00
Fall River	56,863	34	23	42.16	8.82	36.22	—	—
Lynn	45,861	17	8	11.76	17.64	11.76	—	—
Lawrence	38,825	17	9	23.52	11.76	23.52	—	
Springfield	37,577	17	5	35.28	16.64	23.52	—	—
New Bedford	33,393	16	7	50.00	12.50	37.50	—	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	18	9	22.22	5.55	16.66	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	15	10	66.66	20.00	53.28	—	—
Taunton	23,674	11	6	45.45	—	45.45	—	—
Haverhill	21,795	—	—	—	—	—	—	—
Gloucester	21,713	10	4	—	20.00	—	—	—
Brockton	20,783	6	2	—	—	—	—	—
Newton	19,759	4	2	25.00	25.00	25.00	—	—
Malden	16,407	4	3	50.00	—	—	—	—
Fitchburg	15,375	5	2	20.00	20.00	20.00	—	50.00
Waltham	14,609	4	3	—	25.00	—	—	—
Newburyport	13,716	2	1	50.00	—	—	50.00	—
Northampton	12,896	4	1	25.00	25.00	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,626: under five years of age 1,449: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 933, consumption 281, lung diseases 111, diarrhœal diseases 690, diphtheria and croup 86, whooping-cough 39, typhoid fever 38, measles 27, scarlet fever 24, malarial fever 15, cerebro-spinal meningitis five, puerperal fever four, typhus fever two. From typhoid fever, Philadelphia 14, New York six, Boston, St. Louis, District of Columbia, Pittsburgh, and New Bedford, two each, Baltimore, Cincinnati, Providence, Charleston, Salem, Chelsea and Northampton one each. From measles, New York 14, Pittsburgh six, Baltimore five, Cincinnati and Nashville one each. From scarlet fever, Philadelphia and Pittsburgh six each, New York four, St. Louis three, Providence two, Boston, Cincinnati and Springfield one each. From malarial fever, St. Louis six, Charleston three, New York four, Baltimore two. From cerebro-spinal meningitis, New York two, Worcester, Fall River and Chelsea one each. From puerperal fever, St. Louis two, Boston and Worcester, one each. From erysipelas, St. Louis, Pittsburgh and Providence one each. From typhus fever, Philadelphia and Springfield one each.

In the 19 cities and greater towns of Massachusetts, with a population of 930,061 (population of the State 1,941,465), the total death-rate for the week was 24.27 against 21.27 and 18.76 for the two preceding weeks.

The meteorological record for week ending July 24, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
Saturday, July 24, 1886.	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday, ..18	29.880	72.5	80.6	65.3	84.0	54.0	90.0	76.0	W.	S.W.	W.	4	10	4	C.	O.	F.	—	—
Monday, ..19	29.748	71.6	80.1	63.9	78.0	51.0	72.0	67.0	S.W.	W.	N.W.	6	16	9	C.	F.	F.	—	—
Tuesday, ..20	29.712	68.4	76.5	61.4	68.0	59.0	77.0	68.0	W.	S.E.	N.W.	10	8	6	C.	F.	C.	—	—
Wednes., 21	29.791	66.6	70.7	61.2	70.0	62.0	81.0	71.0	N.W.	S.E.	S.W.	6	10	4	C.	O.	C.	—	—
Thursday, 22	29.836	71.9	83.5	60.0	77.0	47.0	47.0	57.0	W.	W.	N.E.	1	12	9	C.	F.	C.	—	—
Friday, ...23	30.035	65.8	72.0	59.2	61.0	71.0	84.0	72.0	N.	N.E.	N.E.	7	12	1	F.	F.	C.	—	—
Saturday, .24	30.057	69.5	79.6	57.8	64.0	37.0	68.0	56.3	W.	N.W.	W.	8	14	8	C.	C.	C.	.00	.00
Mean, the Week.	30.008	69.5	77.6	61.3				66.8											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 24, 1886, TO JULY 30, 1886.

BROWN, JOSEPH B., colonel and surgeon. Retired from active service, July 26, 1886. S. O. 171, A. G. O., July 26, 1886.

GIBSON, J. R., major and surgeon. Ordered from Department East to Department Missouri, on expiration of leave of absence granted in S. O. 158, c. s., A. G. O.; S. O. 168, A. G. O., July 22, 1886.

BENTLEY, EDWIN, major and surgeon. Ordered for duty as post-surgeon, Fort Davis, Texas. S. O. 92, Department of Texas, July 22, 1886.

TAYLOR, M. K., major and surgeon. Granted leave of absence for one month with permission to apply for one month's extension. S. O. 77, Department of Missouri, July 24, 1886.

MIDDLETON, PASSMORE, major and surgeon. Ordered to Department East from Department Missouri. S. O. 168, A. G. O. July 22, 1886.

GIRARD, JOSEPH B., captain and assistant surgeon. Granted leave of absence for three months with permission to go beyond sea. S. O. 170, A. G. O., July 22, 1886.

ROBINSON, SAMUEL Q., captain and assistant surgeon. Ordered for duty as post-surgeon, Fort Brown, Texas. S. O. 92, Department of Texas, July 24, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JULY 31, 1886.

LUNSDEN, G. P., passed assistant surgeon. To duty, Marine Barracks, Washington, for month of August.

CORDEIRO, F. J. B., assistant surgeon. Ordered to Receiving Ship, "Minnesota."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE WEEK ENDING JULY 24, 1886.

CARMICHAEL, D. A., passed assistant surgeon. Granted leave of absence for thirty days, July 24, 1886.

MAGRUDER, G. M., assistant surgeon. To proceed to Cairo, Ill., for temporary duty, July 22, 1886.

DEATH.

Died in Lawrence, Mass., July 28, 1886, Eugene Stephen Yates, D.D., M.M.S.S.

BOOKS AND PAMPHLETS RECEIVED.

Annual Announcement of Trinity Medical School, Toronto. Session 1886–7.

Intracranial Hæmorrhage in its Medico-Legal Aspects. By John B. Lewis, M.D. (Reprinted from Proceedings of the Connecticut Medical Society.)

Announcement of the Medico-Chirurgical College, of Philadelphia. Sessions of 1886–87.

Twenty-Sixth Annual Announcement of the Bellevue Hospital Medical College. 1886–87. With the List of Graduates for 1886.

On the Value of Brücke's Method for the Removal of Interfering Substances from Urine in Testing for Glucose. By Edgar Moore Green, Easton Pa. (Reprinted from American Chemical Journal, Vol. VIII, No. 2.

Proceedings of the Connecticut Medical Society, 1886. Ninety-Fifth Annual Convention, held at New Haven, May 26th and 27th. New Series. Vol. III, No. 3. Published by the Society. S. B. St. John, M.D., Secretary. Hartford, Conn: Press of The Case, Lockwood & Brainard Company. 1886.

Announcement for 1886–87 of the Medical and Dental Departments of the National University. Washington, D.C.: Pigott & Co. 1886.

Boston University School of Medicine. Fourteenth Annual Announcement and Catalogue. July, 1886.

Illustrated Catalogue and Price-List of Physical and Chemical, Electro-Medical, Optical and Scientific Instruments, School Apparatus, etc. New York: Curt W. Meyer. 1886.

A Contribution to the Study of Hay Fever (so-called). By Beverley Robinson, M.D., of New York. (From the Medical News, July 17, 1886.)

Western Pennsylvania Medical College, Pittsburgh, Pa. Announcement. Session of 1886–87.

Forty-Third Annual Report of the Managers of the State Lunatic Asylum at Utica, for the Year 1885. Transmitted to the Legislature, January 15, 1886. Albany: Weed, Parsons & Co. 1886.

Address.

MEDICINE IN THE UNITED STATES AND ITS RELATIONS TO CO-OPERATIVE INVESTIGATION.

THE ANNUAL ADDRESS IN MEDICINE DELIVERED BEFORE THE BRITISH MEDICAL ASSOCIATION, WEDNESDAY, AUGUST 11, 1886.

BY JOHN S. BILLINGS, M.D., LL.D., EDIN., SURGEON, U. S. A.

Mr. President, and Gentlemen of the British Medical Association: You all know that the representative of the American medical profession first selected by your executive committee to deliver the address in medicine to-day, was the late Dr. Austin Flint, Sr., of New York, whose death last March is, therefore, a great and direct loss to you as well as to America. Every English physician knows Dr. Flint by reputation and through his writings; but only those few of you who were so fortunate as to know him personally, can fully appreciate the magnitude of the loss which the medical profession has sustained in his death.

This is not the time and place to attempt to pronounce a fitting eulogium upon him and his work, and I shall, therefore, only say that my deep personal sorrow for his removal is mingled with sympathy for the members of this Association, who have been thus deprived of the pleasure of hearing him state in person some of the results of his long and wide experience. The loss is not a total one, it is true, since he had, fortunately, completed his address on "The Medicine of the Future," which has been published, and has, no doubt, been read by all of you; but in this case the printed page is by no means a satisfactory substitute for the spoken word.

In accepting the request, with which I have been honored by your council, that I should attempt to take his vacant place on this occasion, it is with a full understanding of my inability to fill it that I stand before you.

The request came at a time when I was hard pressed by official duties, and had neither leisure nor opportunity to undertake any special research; hence, to avoid violating one of my favorite Scotch maxims, namely, "That which you do not know, tell that not to any one," it was necessary to select some subject to which I had already given consideration, and which at the same time would probably be of interest to English physicians.

Reflection on these restrictions soon brought the field of selection into narrow limits, almost into "a small intercept of space of one dimension," as a mathematician would say.

What is the significance of this invitation extended for the first time to a physician of another country, and that country the United States, to come to this annual gathering of the medical men of Great Britain and give the address in medicine?

Does it not mean recognition of the unity of medicine, of the utility of coöperation, of the fact that we have common interests, and that the time has come when it is desirable to hear from the outlying younger branch of the family with a view to mutual pleasure and profit in the future? So it seems to me; and I propose, therefore, to call your attention briefly to some points relating to the present condition and future prospects of medicine in the United States, and to the direction in which you may reasonably hope and expect from that country in the future the most useful coöperation in the improvement of medical science and art. I believe that these must be matters of interest to you, and that I can perhaps make clear certain peculiarities which do not seem to be as generally understood on this side of the Atlantic, as it is desirable that they should be, to insure sound judgment upon some of the results observed.

In the first place, permit me to call your attention to the fact that it is hardly possible to make any statements with regard to medicine in, or the medical profession of, the United States as a whole, which shall be definite and at the same time distinctive; that is, which will not apply almost equally well to medicine and the medical profession in other countries. This is due to the fact that there are great differences in the organization of the profession in different parts of America, so that what is true of one State would not be true of another; what is required as to fitness or qualification to practice in one place is not required in another; and the country covers so many parallels of latitude and meridians of longitude, making the conditions of life so diverse, and producing such differences in the prevailing diseases, that a man who is fairly qualified to practice in one section may be poorly fitted to treat the endemic diseases of another.

As in painting a picture, it is best to locate and define the shadows first, and deal with the lights afterward, let us begin by considering some of the things that American physicians complain about; in other words, some of their supposed grievances. One of these is that the profession is overcrowded; that there are too many doctors, both *in esse* and *in posse*, and that this is due to too low a standard of education, and to the want of legal restrictions as to the qualifications which shall give a man the right to practice. The feelings of some of our physicians on this subject are in full accord with those of the good old New England deacon who told the village scapegrace seeking admission, that "he thought the church was about full."

Now what is the number and distribution of medical men in America? Statistics gathered in 1883,[1] showed that in the United States and Canada there were 90,410 persons calling themselves physicians, being in the proportion of 1 to every 600 of population. In Canada alone, there were 3,487 physicians or 1 to 1,112 of population. If we take the figures of our last census, of 1880, the proportion of physicians reported, is 1 to 589 of population, or 17 per 10,000. In England and Wales, by the census of 1881, the proportion of physicians is only 5.8 per 10,000, but these figures are not properly comparable with those of the United States, because they do not include unregistered persons. If the same classes were included that are counted in the United States report, I presume that the proportion would be about 9 per 10,000, or a little more than half that in the United States.

In the United States the proportion to the population of those who call themselves physicians varies greatly in different localities; thus, in Colorado there are 29.3, in Indiana 25.2, in Oregon 24.3, and in Arkansas 23.5 per 10,000; while in New Mexico there were only 6.6, in South Carolina 9.2, and in North Carolina 9.7 per 10,000.[2]

[1] Illinois State Board of Health Report, 1884.

[2] A map of the United States was here shown, on which the proportion of persons calling themselves physicians to the population in the several States was indicated by different shades of color.

It is not easy to give satisfactory reasons for these differences; we can only say that they do not depend to any great extent upon local legislation. The proportion of physicians is generally lowest in the Southern States lying east of the Mississippi, and highest in those regions where immigration has recently been active. If we compare, by localities, the proportion of physicians to the population with that of clergymen and lawyers, we find some curious differences. It seems that the lawyers in the United States number 12.7, while in England and Wales they are 6.6 per 10,000, but that on the other hand the clergymen are 14.6 in England and 12.8 in the United States per 10,000 of population. In many instances it seems that where the lawyers are most numerous the supply of clergymen is smallest. I believe that a fair proportion of physicians to population is about 1 per 1,000, which is not far from the actual proportion in England, while the true proportion of practicing physicians in the United States is about 1 in 750. We must admit, then, that there is at all events no scarcity of physicians in the United States, and, as we have over 80 medical schools at work, besides a fair proportion of medical immigrants, there is no immediate danger of any interruption to the supply.

Let us now consider the second head of the complaint, namely, that the standard of education is too low. There is ground for this, considered with reference to some localities, but not for others. I said a moment ago that a man might be fairly qualified for practice in one part of the country, and yet find himself at a loss in another. This needs a little explanation, which I can, perhaps, give most easily in connection with a map of the United States, which I here show you. This map, which was prepared for a very different purpose, indicates, by different shades of color, the relative proportion of deaths reported as due to malarial disease to the total number of deaths in different parts of the country, for the census year 1879–80. You will note how comparatively light the tint is in the north and north-east, and how dark the shades become in the south and in the valley of the Mississippi, thus indicating the great differences which exist as to the prevalence and deadly effects of the malarial poison in different sections of the country. It is in some of these low-bottom lands and swampy districts that we meet with cases of congestive chills and of malarial hæmaturia, cases in which the patient has been described as being "a mere appendage to a huge malarial entity, an incident of a miasmatic cataclysm." Furthermore, this strip of land bordering on the Gulf Coast is in the yellow-fever zone, and has, heretofore, been repeatedly desolated by this pestilence.

As compared with the North and East, much of this malarious region is a thinly-settled country, an almost purely agricultural country, and not a rich country. I need hardly tell you that the physician who has received his chief clinical instruction in the office of his preceptor in Vermont or New Hampshire, supplemented by distant glimpses of a few cases in hospital in Boston or New York, will find himself at a loss, at first, in dealing with the emergencies of daily practice in Arkansas and Mississippi. He will be subjected to influences which, at times, are dangerous to one who is not acclimated, and which tend to produce depression of spirits, want of energy, and bad health. He will not have free and constant access to scientific companionship, nor be stimulated by the influence of learned societies, and he cannot avail himself of the ordinary sources of amusement, education, and rest, such as art galleries, the drama, libraries, and museums, etc., which are found in the large cities. Moreover, the pecuniary reward which the practitioner, in many of these places, can reasonably hope for, is comparatively small.

Taking all these things into consideration, it is clear that if a man, after spending from six to eight years, and from one to two thousand pounds in acquiring such a general and professional education as it is now considered that a skilled physician should possess, then settles in such a region, with the prospect of an average income of from £150 to £200 per year, it is not from pecuniary motives alone. There are such men in such places — men who are not only highly educated and skilled practitioners, but who are also original investigators and thinkers. It was within the limits of this malarial shadow that the foundation of modern gynæcology was laid by Marion Sims, of abdominal surgery by McDowell, Battey, and Gross, of an important part of the physiology of the nervous system by Campbell. Nevertheless, the rule holds good that malaria and science are antagonistic; the exceptions prove the rule.

Nor can the inducements for highly-educated physicians to settle in thinly-settled localities be made stronger by any form of penal or restrictive legislation. Any attempt to fix a standard of requirements or qualifications for practice which shall be the same for such rural districts and for the large cities and manufacturing towns, must result in the adoption of what competent judges would consider so low a standard as to be ridiculous and useless. The demands are widely different, and corresponding differences exist in the sources of supply, that is, in the medical schools.

There is a class of medical schools in the United States whose object is to give the minimum amount of instruction which will enable a man to commence the practice of medicine without much danger of making such serious and glaring blunders as will be readily detected by the public. There are other schools whose aim and object is to make fairly well-trained practitioners, the general character of the instruction given in these being substantially the same as that given in your English hospital medical schools. The results of such a three years' graded course of instruction in medicine as these schools furnish, depend upon the character of the material upon which they work, that is to say, upon the general preliminary education possessed by the student at the time of his matriculation. This is evidently too often defective, and only a few schools have thus far ventured to establish any standard of preliminary examination which at all approaches in its demands that which is required in England.

The proverb that it does not pay to give a $5,000 education to a $5 boy is clearly of American origin, and sums up a great deal of experience.

You have nineteen portals of entrance to the profession, and have not found it easy to keep them all up to the standard. In America, we have over eighty gates, a number of turn-stiles, and a good deal of the ground is unenclosed common. Many of our physicians are more or less dissatisfied with this state of things and with the results thereof, and every year, in some States, efforts are made to secure legislation which it is supposed will protect the interests of the

profession, though those who advocate such legislation are usually prudent enough to claim as their only motive a desire for the protection of the public.

Now, how does this free trade in medicine and the low standard of qualification, or no standard at all required by law, affect practitioners as individuals? To answer this we must divide the profession into several classes. In the first place, in all our cities, great and small, there is a large class of physicians who are as well educated and as thoroughly competent to practice their art, as can be found in the world. They have studied both at home and abroad, have had extensive clinical training, are always supplied with the latest and best medical literature and the most improved instruments, and many of them are connected with hospitals and medical schools. Among them are found the majority of our writers and teachers, and the successful men are the survivors of a struggle in which there has been keen and incessant competition. These physicians, whose positions are fairly assured, and who, as a rule, have all the practice they desire, are not usually active leaders in movements to secure medical legislation, although they passively assent to such efforts, or, at least, do not oppose them; and their names may sometimes be found appended to memorials urging such legislation. They are clear-headed, shrewd, "practical" men, who know that their business interests are not specially injured by quacks and ignoramuses, rather the contrary, in fact, for they are called on to repair the damage done by the quack to people who have more money than brains; and they are not inclined to risk the fate of the Mexican donkey who died of "*congojas agenas*," that is, "of other people's troubles."

Then there is another large class of honest, hard-working practitioners who rely more on what they call experience and common-sense than on book-learning. Many of these have obtained assured positions of respectability and usefulness, and are comparatively indifferent to medical legislation, so far as their own interests are concerned. Others, however, who are not so successful, feel the competition of the local herb doctor or of the travelling quack more keenly, and have more decided views about the importance of diplomas. Among these are the young men who have not yet acquired local fame, and who are apt to become very indignant over the doings of some charlatan in the neighborhood, or of some druggist who prescribes over his counter. These last are usually quite clear in their minds that the State ought to interfere and prevent injury to the health of the people.

I have known two unsuccessful physicians who finally abandoned practice, and who gave as a reason of their failure — one that "he did not know enough," and the other, that "he had not the manners and tact which would inspire confidence in his patients"; but such frank-speaking men are rare.

Thus far, as a rule, the efforts which have been made to secure legislation upon medical matters in America have come from the profession itself, and have been chiefly urged and recommended by physicians. The general public, and even the educated public, has shown very little interest in the matter. It does not demand protection against ignorance, but entrusts the care of its health, and the lives of those who are nearest and dearest to it to almost any one who announces himself as prepared to take charge of them. The number of those who profess to practice medicine in the United States, and are not qualified to do so, is undoubtedly large, though by no means so large as one might suppose after listening to the impassioned eloquence which is duly aired every year upon the subject. There are some advertising charlatans and travelling quacks occasionally to be met with, but they are rare.

The most rigid tests of qualification, in our profession in the United States, are those required of candidates for admission into the medical departments of the army and navy. The standard established for these is about the same as that for the corresponding corps of the English army and navy; and of the candidates who apply, from seventy to eighty per cent. are rejected.

Certainly, we must admit that this percentage indicates an unsatisfactory state of things. But what evidence have we as to its results upon the health and life of the people? What shall we take as the measure of the difference of skill in physicians? The death-rate? If we compare the death-rate of the United States with those of other civilized countries, we find that it is as low as any with the exception of Sweden. Does a low death-rate mean better sanitary condition or more skill among the doctors? For the last twenty years the death-rate has been diminishing in England; the average amount of life for each person here has been increased, but I observe that the sanitarians claim this as proof of the value and importance of their efforts, and that nothing is said about its being in any way due to increase in medical skill or to improvements in medical science. Evidently this test is not a convincing one. Almost the only matter in which figures seem to demonstrate the importance of superior medical education and skill is in the statistics of deaths due to childbirth and of the results of surgical operations.

The proportion of deaths from childbirth to the number of births is decidedly greater in the rural districts than in large cities, and among the colored than among the white population. If this difference were found only in the United States statistics, it might be accounted for by the differences in the trustworthiness of the sources from which the data are derived; but we find similar differences in England, and we must admit that these are probably largely due to the fact that in cities labor cases receive more prompt and efficient professional care than they do in the country. I need hardly call your attention to the results of antiseptic surgery, or of modern abdominal surgery, as compared with those of twenty-five years ago. Here there can be no question as to the improvement. It is well to remember in this connection that whatever undue prolongation of disease or unnecessary mortality is due to want of skilled medical treatment occurs mainly among the wage-earners, the farmers, mechanics, salesmen, needlewomen, etc., and not among the rich, nor yet among the very poor.

Now, seeing that really efficacious legislation with regard to medical education or to the practice of medicine must, like all efficacious legislation, be substantially in accord with public opinion, since it is impossible to continue to punish for any length of time that which public opinion does not condemn; and as the great mass of the people of the United States have not as yet had such evidence as they can understand, and would thoroughly convince them that it is to their interest to suppress quackery, it follows that it is neces-

sary to go slowly and to allow such evidence to accumulate.

To me it seems that the most important of the first steps to be taken in this direction is one which has already been taken in Great Britain— namely, the requirement that every death in the community shall be registered, and that in such registration satisfactory evidence shall be given as to the cause of death, sufficient at least to prove that such cause is what is known as a natural cause, that is, that it is not due to crime.

When it is admitted that one of the duties of government is to provide for such registration, both in the interests of life and to secure the rights of property, it follows, necessarily, that those persons whose certificates as to the cause of death are to be accepted as satisfactory evidence that there has been no foul play, must present evidence that they are properly qualified to make such certificates. The principle is precisely the same as that which induces a government to provide for the examination of the medical men whom it employs in its army and navy.

So far as the art of medicine is concerned, the demand has much, though by no means all, to do with regulating the quantity and quality of the supply; and there are few localities in the United States where the qualifications of the medical man are not fully up to the standard which the community is able to appreciate and is willing to pay for. In the natural order of things suffering and death are the remedies for ignorance, weakness, and vice, and the means of preventing the transmission of these characteristics to offspring. These remedies, though effectual are drastic, and we do our best to avoid them, but perhaps it is well that the penalties cannot be done away with altogether.

The rules regulating the practice of medicine in the United States are all State laws. If we were to judge only from what may be found in the statute books, assuming that all the laws contained therein are duly enforced, we should find that nearly two-thirds of the States have laws ostensibly regulating the practice of medicine within their borders. As a matter of fact, however, in over half the States which have laws on this subject no attempt is made to enforce them, and in almost all of them the possession of a diploma, no matter from what source derived, is all that is required.

Of the various methods which have been tried in different States to insure by law that physicians shall be properly qualified, I will call your attention to two which are of special interest.

The first is that of Alabama, the principle of which is to organize the whole medical profession of the State, and use it as the means of regulating the qualifications of practitioners and of caring for the public health. The Medical Society of the State of Alabama with its branches, the county medical societies, thus forms a part of the machinery of the Government; it appoints boards of medical examiners, selects State and county sanitary officials, supervises the registration of vital statistics, the administration of quarantine, etc.,—in short, it is the State Board of Health, and the county branches are the county boards of health.

In this State the possession of a diploma does not give the right to practice, it simply enables the owner to go before the examining board. The examinations before the County Board are partly in writing, and are subject to review by the State Board, which has in some instances publicly condemned the local examinations as not sufficient.

This system has now been in operation nine years, and has gradually been consolidated and improved by educating local boards, and getting all physicians interested in it, until it is now working fairly well. Much remains to be done, and it is too soon to predict results; at present the success of the system is largely due to the wisdom and energy of one man, who has given his whole time and labor to the work, and it remains to be seen whether the machine which he has built will work well without him.

The second system to which I will call your attention, is that of the State of Illinois, which was commenced in 1877, or about the same time as that of Alabama.

In Illinois any one who presents a diploma, or license to practice, from a legally chartered medical institution in good standing, is entitled to practice, and the State Board of Health is to decide as to what shall constitute "good standing." The Board of Health also examines all persons who do not possess satisfactory diplomas, and who nevertheless wish to practice in this State.

One of the greatest practical difficulties in the way of providing any system of State examinations in medicine in the United States, is that public opinion will not support any law which can be supposed to condemn or in any way to injure homœopathic and eclectic practitioners or their schools, and hence any proposed law relating to medicine, or to the organization of State boards of health, which does not recognize the existence of these sects will, in many States, at all events, meet with enough opposition to defeat it. In Illinois this difficulty was surmounted by the arrangement, that of the five physicians on the Board, one should be homœopathic and one eclectic. The Kansas law, passed last year, goes further in this direction, and provides that appointments must be so made that no school of medicine shall ever furnish a majority of the members of the Board. Much to the surprise of many, the Illinois plan has worked very well — there has been no quarrelling in the Board —and the homœopathic and eclectic members seem to have upheld quite as high a standard of qualification as their fellow members. The results of the work in Illinois have been very good. A large number of ignorant charlatans were forced to leave the State. The requirements of the Board as to what shall constitute a medical college in good standing, have been raised, and it has thus caused improvement in the medical schools, not only of Illinois, but of other States. Moreover, the neighboring States have been stimulated to action, not only by the force of example, but because they received the men who had been driven out of Illinois, and found the accession an unpleasant one.

As in the case of Alabama, it is too soon to judge definitely of the results; and in Illinois, also, the satisfactory working of the system is largely due to one man, the Secretary and executive officer of the Board, who has given his entire time to the work. I do not, by any means, wish you to suppose, however, that I consider this as being a serious objection to this or any other plan, for in the building up of any organization, or the carrying out of any system, much must always depend upon some one man.

The relations of the United States Government to medical education and to the practice of medicine are indirect only, the regulation of these matters by law being part pf the police power which, under the constitution, is reserved exclusively to the individual States. The United States employs physicians in its Indian Department, in the Pension Department, in the Marine Hospital Service, and in the medical departments of the army and navy, and it has power to regulate the practice of medicine in those territories which are not yet organized into States; and also in the District of Columbia; but thus far it has made no use of such power. The qualifications of physicians employed in the army and navy and in the Marine Hospital Service, are determined by examinations made by boards of medical officer sbelonging to those services. The possession of a diploma from a respectable medical college is a pre-requisite for such examination, but beyond this it does not count; that is to say, the examination is the same for the holders of all diplomas, and covers all branches of medicine. But while the relations of the general government to medical education are thus indirect, they have of late years become of very considerable practical importance, and are now exerting much influence upon medical investigations and literature. This is being effected by the museums and libraries which are now being formed under the auspices of the government at Washington, and also, to some extent, by certain special investigations undertaken by the government in the interest of preventive medicine. Of these various agencies one of the most important is the library which has been formed at Washington, under the auspices of the medical department of the army in connection with the Army Medical Museum; both of these institutions being a part of the results of the late civil war. The museum was at first formed to illustrate military medicine and surgery, giving the results primary and secondary, of injuries inflicted by modern weapons of warfare and of the diseases of armies in the field; in which direction the collection is unrivalled in extent and completeness. Gradually its scope has been enlarged to include illustrations of anatomy, development, and all branches of pathology and therapeutics, so that it is fast becoming a museum covering the whole field of medical science. In like manner, the library, which commenced in a collection of those books relating solely or especially to military medicine and surgery, which were required in the compilation of the "Medical and Surgical History of the War," has expanded into a great medical library, which is now one of the best practical working collections of the kind in the world. These collections, then, no longer appertain exclusively, or chiefly to the business of one department, but belong to the whole profession of the United States as a body; and the department which has charge of them is managing them from this point of view. The influence of the library in stimulating research, and upon the quality of medical literature, is already very perceptible, and is destined to increase with advancing years. I think I may also venture to claim that the utility of these collections, and especially of the library, is by no means confined to the medical profession of the United States, for the catalogues and indexes which are being issued in connection with them, are of service to medical writers and teachers all over the world.

As regards investigations into the causes of disease, undertaken at the expense of the general government, only a beginning has as yet been made; but it is sufficient to indicate future possibilities and probabilities. The main importance of the work of the National Board of Health, which was organized in 1879 under the stimulus of the great yellow fever epidemic of the previous year, was due to investigations upon the causes of yellow fever and diphtheria, the relations of soils and of water-supply to certain diseases, etc., investigations of the same general character as those which are being prosecuted under the auspices of the Local Government Board in this country, and of the Imperial Board of Health of Germany. It is true that owing to circumstances which I cannot here explain, the work of the National Board of Health has been stopped; but there is every probability that it will be resumed, with perhaps some change of organization, at no distant day, and I need not dwell upon the vast importance to medical science of organized and systematic work in this direction. Similar investigations have been undertaken by State boards of health, and especially by the State Board of Health of Massachusetts, and the fact that governmental health departments are tending to work in this direction is significant as to future coöperation from such sources.

In this connection should be mentioned the National Museum of Hygiene, which has been formed under the direction of the medical department of the United States Navy, which is now one of the most instructive collections of the kind in the world, and has also connected with it an excellent library and a well-equipped laboratory.

Comparative and experimental pathology is also receiving attention from the Government under the direction of the Department of Agriculture, which is doing some good work in the investigation of the diseases of our domestic animals. Our investigators are, fortunately, not hampered by antivivisection laws, and there is little danger that they ever will be, for though we have our due proportion of fanatics and seekers of notoriety who wish to emulate the British Antis-, their true motives are so well understood that they have little power to do mischief.

Of medical associations in the United States there are several classes. We have a few local societies, analogous to clubs in their organization, which own property in the form of buildings, libraries, etc., are somewhat conservative in their selection of members, and are only to be found in large cities. Of these, the College of Physicians of Philadelphia is the oldest, and has the largest and best library and museum — it will celebrate the hundredth anniversary of its existence next year. In New York the Academy of Medicine, and in Boston the Medical Library Association, are of the same character, and, in general, each large city has a similar society, although as yet they have not become fully anchored and established by the acquisition of property. The second class includes local societies devoted to specialities such as pathology, obstetrics, etc. These also are found only in large cities, and as yet are few in number. Four of them only have published transactions. Corresponding with these are national societies devoted to specialties such as gynæcology, ophthalmology, surgery, pathology and clinical medicine, etc. These societies meet annually, elect their own members, exercising care in the selection, and publish valuable transactions.

Another class is composed of the county medical societies, which strive to include all regular practitioners residing in their precincts. From these are sent delegates who form the State medical societies and the American Medical Association. The mode of organization varies somewhat in the different States, but the representative principle prevails in all. Most of these societies publish transactions, and the American Medical Association now has its journal.

As to the condition of medical science and art in America, it partakes of the general progress, for the press now makes all discoveries the common property of the civilized world. The marked feature of the present epoch is the recent advance in knowledge as to the relations between microörganisms and certain diseases, and the strong stimulus which this has given to preventive medicine. Sanitation is becoming fashionable, and if we may believe some of its votaries, it is a very simple matter to prolong the average lifetime to the scriptural "three score years and ten." All that is necessary is that everything shall be clean, and every person virtuous.

Having learned to distinguish those diseases which can be prevented much more easily and certainly than they can be cured, we may turn them over to the sanitarian, who has his own battles to fight with ignorance and prejudice. If he succeeds, and so far as he succeeds, he will change, in certain respects, the work of the practitioner.

The lives which are saved from cholera and typhoid, from consumption and diphtheria, and from the acute specific diseases, will, at last, be weakened and destroyed in other ways. The work of the physician will not be lessened by preventive medicine, it will simply be required more for older persons, and for another class of diseases. As sanitarians must depend upon practitioners for much of the information which is essential for their work, it follows that if preventive medicine is to become a working power, it will bring the mass of the profession into closer relations with the State than its members have held heretofore. What these relations shall be is one of the most interesting, and, at the same time, one of the most difficult, of the many problems with which we, or our successors, must deal. I have referred to some experiments on this subject which are now being tried in America, where it is much easier to make such trials than it is in an older country hampered with vested interests.

Just at present, in this, as in a number of other things, our tendency is toward centralization, both in the several States and for the whole country, and it is not improbable that we may go far on this road in the future.

I come now to the consideration of the second part of my subject, namely, the direction or manner in which we have reason to hope that medicine will be developed in the United States, and the kind of coöperation which you may reasonably expect to receive from the medical profession of that country.

A marked feature of the present day, in medicine, as in other things, is the tendency to specialization in study and in practice. But this very development of specialties, of increasing minuteness in the division of labor, increases the necessity for coöperation, and in fact tends to create what we may call the specialty of coöperation. Formerly a rifle, or a watch, was made by a single workman. No two instruments were exactly alike, each piece had its own individuality, and was not interchangeable, and the cost of the whole was such as to put it beyond the reach of the multitude. Now, the work on these things is greatly subdivided, one man makes only one small wheel, or spring, or pinion, and another another, each doing his work according to a uniform pattern, rapidly, perfectly, and at comparatively small cost.

But, in addition to the workmen who make the individual parts, it is now necessary to have one person specially skilled in making drawings and preparing patterns, another to assemble the completed parts, and a third, to test the whole after it has been put together. As the centrifugal force increases, the centripetal power must also increase.

In one sense medicine, as we have it to day, is the result of coöperation, not of deliberate, centrally planned and direct coöperation, but of natural selection from results produced by many men, often working at cross purposes, and, therefore, wasting much energy, but nevertheless working, though blindly, to a common end. And it is safe to predict that in the future much of the best work will be done in the same way, by individual effort inspired by the love of science, by personal ambition, etc. But the results obtained in this way come slowly, and some things that we want can hardly be obtained by individual effort, even if we were willing to wait, hence we must look to organization for help.

This is an age of machinery, of exchanges, of corporations, for all these correspond to one and the same fundamental idea. Men make machines to do what the individual cannot do, and they make them not only of brass and iron, but of men, for such an obvious source of power to the man or men who can master the combination is not likely to be overlooked. One result of such organization is seen in our encyclopedic works on medicine, whether these be called dictionaries or handbooks; another in the great medical journals; another in associations which seek to wield political influence; another in the comparatively recent attempt at collective investigation of disease. With these may be classed also the attempts of Government departments to make scientific investigations, to collect libraries and museums, to do things which require long continuity of effort on a definite plan in order to produce the best results.

And it is by the combination of all these, with the efforts of individual workers, that substantial advance and improvement are to be effected.

In this broader view of coöperation, it is interesting to consider those fields of labor to which comparatively few physicians can devote themselves, because of want of time and opportunity, but whose proper working is, nevertheless, of the greatest importance to the practitioner.

One of these is experimental laboratory work, and in this direction, the prospect of valuable contributions from America is now exceedingly good. Some of the wisest of our most wealthy men have shown their appreciation of the responsibilities which riches entail on their possessors by seeking new channels through which to benefit their fellowmen. While the old and well-known methods of endowing hospitals and charitable institutions are not neglected, there is apparent an increasing tendency to endeavor to promote the advancement of knowledge, and especially of such knowledge as tends to the mitigation of suffering and the improvement of the race, to furnish means for the investigation

of disease, to provide laboratories, and to endow medical schools, and thus place them beyond the reach of the temptations and difficulties which must always exist when such schools are dependent upon the fees of students, and are, therefore, practically commercial manufacturing establishments.

As illustrations of this tendency, I may mention the bequest of £1,400,000 by Johns Hopkins to endow, in the city of Baltimore, a university and a hospital, of which the medical department is to be a special feature, to be provided with the best laboratory and other facilities for original investigation, as well as for teaching; the gift of Mr. Carnegie to the Bellevue Hospital Medical School of New York, in the shape of a well-equipped pathological laboratory; the presentation by Mr. Vanderbilt, and members of his family, to the College of Physicians of New York, of £200,000, to provide for that school new buildings and clinics having the best means of teaching and research, and the endowment by an unknown donor, of a laboratory for the University Medical College of New York, with the sum of £20,000.

Last year, in his retiring address as President of the New York Academy of Medicine, Dr. Fordyce Barker referred to this tendency to regard wealth as a trust to be used for the benefit of humanity, and, after sketching the requirements of the Academy on a scale which would require an endowment of at least a million of dollars, predicted that such an endowment would be furnished by wealthy citizens of the city. I believe that he was right, and that his prediction will become history.

As the class of men who have wealth, leisure, and knowledge becomes greater, there comes an ever-increasing demand, not only for the best medical skill, for the most expert practitioner, but also for exhaustive research in every direction which promises to furnish new means for the prevention or relief of suffering, and for warding off, as long as possible, the inevitable end; and hence there is little reason to doubt that the examples I have named will be followed by others in the near future. With such opportunities, and under such conditions and influences, the stimulus to the young and ambitious worker is strong; we have abundance of material of this kind upon which the process of natural selection can operate, and there is little reason to doubt that the result will be substantial and valuable contributions to physiology, pathology, and therapeutics.

I have already referred to some of the work which has been undertaken by the United States Government for the benefit of medicine and of the medical profession in the formation of a library, and the providing of means of assistance in bibliographical research. There is another most important means of advancing medical and sanitary science which only a Government can furnish, and in which field of work England now stands preëminent — I refer to vital statistics. In this field, the United States Government has thus far done but little, yet enough to show the great interest and value of what we have a right to hope will be done in the future by combining the work of the several States. This is one of the fields in which international coöperation is most desirable; it alone can furnish data sufficiently complete and reliable for a scientific consideration of the relations of disease to geographical and race distinctions.

Geographical pathology is a very old branch of medicine, as old, at least, as Hippocrates, whose treatise on airs, waters, and places is justly famous. Permit me to remind you of its opening clauses: "Whoever wishes to investigate medicine properly should proceed to consider the seasons of the year, and what effects each of them produces, the winds, the qualities of the waters, the situation and exposure of the city, the character of the ground, and the mode of life of the inhabitants." Then, says the wise old Greek, "From these things he must proceed to investigate everything else."

There is a breadth of view in that last sentence which is particularly satisfactory. Since the days of Hippocrates, there has accumulated a vast amount of literature relating to the supposed connection between the topographical peculiarities of different cities and countries, and the diseases which prevail in them, but when the books and essays, which come under the heading of "Medical Topography," are examined, it will be found that the topographical part is much more complete than the medical — which last is mainly confined to the consideration of malarial diseases, and is vague and indefinite with regard to their relative prevalence.

Much the larger part of our really valuable information on this subject has been obtained within the last twenty-five years, as Professor Hirsch points out in the preface to the recent edition of his very valuable handbook of geographical and historical pathology, and while the contributions of the United States to this branch of medical science have been already important, I hope to be able to show you that they are probably destined to be of steadily-increasing importance in the future. Considered, as a body, the opportunities of the medical profession of the United States for the study of the manifold influences which can cause, modify, or prevent disease, are in some respects unequalled. As regards peculiarities of climate, soil, altitude, etc., the country is so large as to afford almost every variety of combination, so that nature may be said to be making a series of experiments, on a grand scale, upon the mass of humanity which is so rapidly increasing in the new world. Especially is this the case with regard to the problems of heredity as connected with the mysterious relations of certain forms of disease to race. America is at present the great mixing bowl into which are pouring streams of human life from origins the most diverse, from regions the most remote. Black and white, red and yellow, long skulls and short skulls, Celt, Teuton, and Slav, are being brought together under similar conditions of climate, food, and occupation, thus permitting of the comparison and study of the different effects, if such exist, which result from variations in parentage under conditions of exposure to the same causes of disease.

For a little time, a generation or two at least, the different streams remain pure, then there is more or less mingling, in some cases very little, in others very intimate, but always there is an opportunity of studying the races separately, as well as of investigating the results of their various mixtures.

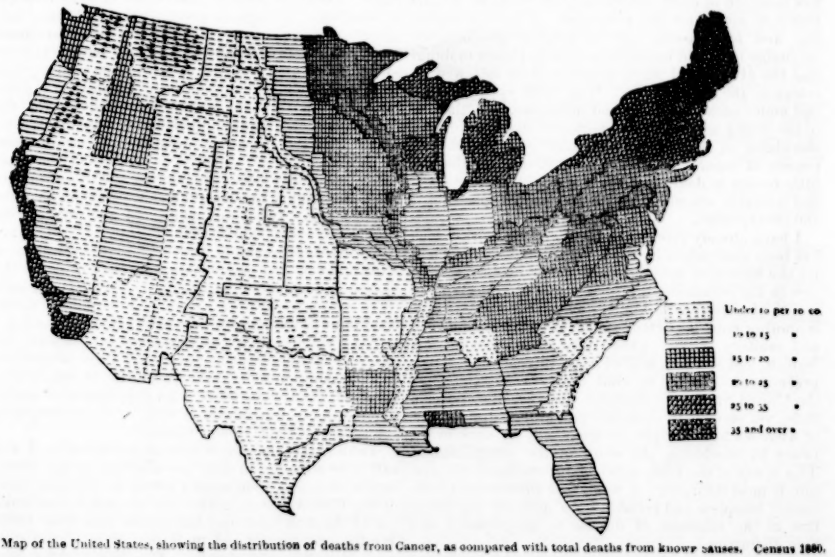
To illustrate the possibilities in this direction, I will call your attention to some peculiarities in the distribution of deaths from certain causes in different parts of the United States, and for this purpose I shall make use of the data from our last census, taken in 1880. We have no general and uniform system of registration of births and deaths. The larger cities, and

about half a dozen States, have such a system, but for much the larger portion of the country the only means which we have for determining differences in amount or causes of mortality in different localities is through the census, which is taken once in ten years. The data thus obtained with regard to deaths are imperfect, because when these are collected, only at the end of the year, about thirty per cent. of the deaths are unrecorded; and they are inaccurate, because the reports of the causes of death are not furnished by persons competent to give reliable information with regard to them. Nevertheless, these data are the best that we have, and although for a large part of the country they do not give us the actual number of deaths from any cause or set of causes, they do furnish some interesting information with regard to the relative prevalence and importance of certain causes, and suggest questions and lines for future investigation, although they do not furnish definite and scientific answers.

Take, for instance, this map of the United States upon which, by varying shades of color, is shown the proportion of deaths reported as due to cancer, as compared with the reported deaths from all causes. Cancer, using the term in its broadest sense, is a disease which seems to be gradually increasing in frequency among civilized nations, and, possibly, to have a tendency to increase with the advance of civilization.

In England and Wales the proportion of deaths from this cause seems to have nearly doubled within the last twenty-six years, and a similar rate of increase can be made out in certain parts of America. How far this increase is a real one, and how far it is due simply to improvement in diagnosis, is a question yet unanswered.

The mortality from cancer in the United States is proportionately greatest in the New England States, somewhat less so in New York and Pennsylvania, and it causes the least proportion of deaths in the Mississippi Valley and the South generally. The proportion of deaths from cancer in the United States is somewhat greater than it is in England; but it is not possible to make any accurate comparisons in this respect. Now why are the shades on this map so dark in the northeast and so light in the south? In the first place, cancer is a disease the mortality from which steadily increases with advanced age, as you may see from this diagram. Hence, cancer causes a higher proportion of mortality in those localities which have the greatest proportion of population living at advanced ages, and in the United States these localities are the New England States, as you will see by this map. One deduction from this which may perhaps not have occurred to all of you, is that a large proportion of deaths from cancer indicates, to a certain extent, that the locality in which it occurs is a healthy and long-settled one, since it has probably a relatively large proportion of inhabitants, and especially females of an advanced age. But another explanation of the peculiar shading of the cancer map is found in the relations of race to the tendency to death from this disease. The proportion of annual deaths from cancer per hundred thousand living population was, in round numbers, twenty-eight for the whites, and thirteen for the colored. That is to say, cancer is more than twice as prevalent among whites as it is among colored in the same localities, for these figures apply only to the South. On the other hand, cancer appears to cause a greater proportion of deaths in persons of Irish and German parentage, than it does among the rest of the white population, the indications being that between the ages of fifteen and sixty-five, the Germans are especially liable to cancer; more so than the Irish,



Map of the United States, showing the distribution of deaths from Cancer, as compared with total deaths from known causes. Census 1880.

and decidedly more so than the average white population. Now when we remember that the greater part of the colored population is in the South, and the greater part of the Irish and German population is in the North, we have another reason for the differences in mortality caused by this disease in the two sections.

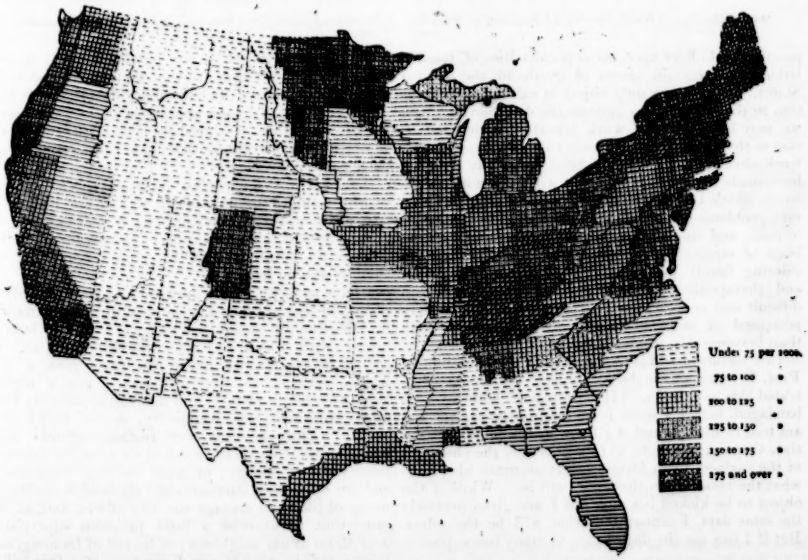
Again, take the maps, howing the distribution of the deaths from scarlet fever during the census year. You see that this also was most fatal in the North, and, here again the influence of race comes in, because in the negro race the mortality from this disease appears to be very low. This disease has always been much rarer in the South than in the North, and the contrast was much stronger in former years than it is at present: but this cannot be explained solely, or even to any great extent, by difference of temperature because scarlet fever has often been epidemic in the tropics, and, on the other hand, in many localities in temperate climates it is among the rarest of diseases.

Here is another map showing the distribution of deaths reported as due to diphtheria during the year. Diphtheria is a disease which has been unusually prevalent in the northern portion of the United States for several years. During the census year it caused 2,374 deaths out of every 100,000 deaths from all causes, while in England, for the year 1880, the deaths from diphtheria were 532 per 100,000 deaths from all causes, that is to say, the comparative mortality from this disease in England was less than one-fourth that of the United States for the same period. Diphtheria, again, is essentially a disease of the North but especially of the Northwest. It causes an excessive mortality in children of German parentage, sufficiently so to show that here again the influence of race comes into the problem, although, probably, only indirectly, that is to say, it is probable that it is the habits of a peculiar class of people which favors the propagation of the disease rather than any physical peculiarities in the structure of their bodies.

Two more illustrations of the geographical distribution of disease in the United States may be of interest in this connection. The first is that of consumption, the second of pneumonia

Consumption is a vague term, and, as used in the census, no doubt includes many cases which were not true tubercular phthisis. It is reported as causing twelve per cent. of all the deaths, or more than any other single cause. In England and Wales, in 1880, it caused a little over nine per cent. of all the deaths. Such wholesale ratios are, however, of little interest or value. There are very great differences in the liability to this disease in different parts of the United States, as the map makes sufficiently evident, and it is from a study of the causes of these differences in the data derived from large masses of people, combined with clinical histories and experimental laboratory work, that we have good reason to hope to obtain knowledge, not only of the causes of this disease, but of better methods of prevention and treatment than are now at our command. It causes a greater mortality among the Irish than in other white races, and, perhaps a greater mortality among the colored than among the white.

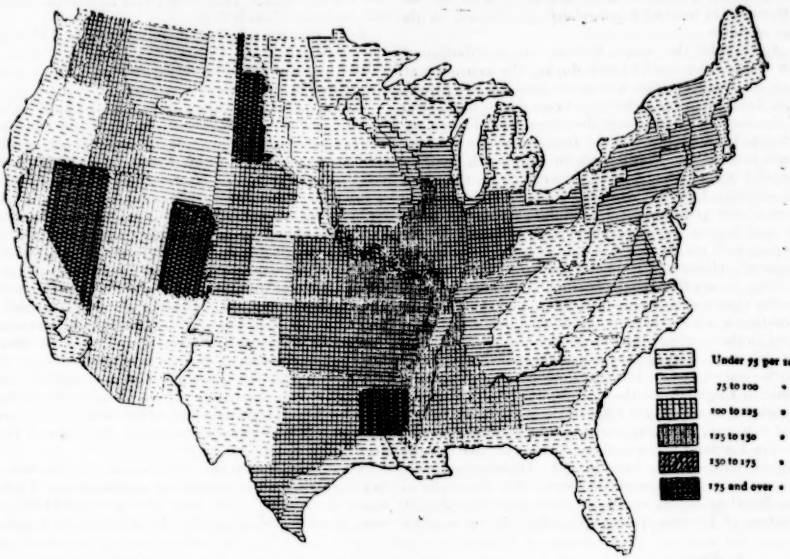
Next to consumption, pneumonia is reported as causing the greatest number of deaths in the United States during the census year, giving a ratio of 8.3 per cent. of all deaths, as against 4.8 per cent. in England



Map of the United States, showing the distribution of deaths from Consumption, as compared with total deaths from known causes. Census of 1880.

and Wales in 1880. Here, again, the local distribution of deaths is interesting, and the contrast between the map of consumption and that of pneumonia is very striking. Here, again, we find that race peculiarity is an important factor in the problem, the proportion of deaths from pneumonia among the colored being much greater than it is among the white.

I have elsewhere commented more fully than it is



Map of the United States, showing the distribution of deaths from Pneumonia as compared with total deaths from known causes. Census of 1880.

possible to do here upon these peculiarities of the distribution of certain causes of deaths in the United States.[3] In fact, my only object in calling your attention to the subject is to indicate the direction in which we may hope for good work hereafter, which indication is the chief, if not the only valuable result of the work already done. In the brief comments which I have made upon these maps you will have noticed the stress which I have laid upon race peculiarities. These race problems are simply problems of heredity taken in mass, and there is no need to urge upon an assemblage of medical practitioners the importance of considering family peculiarities in diagnosis, prognosis, and therapeutics. That the questions involved are difficult and complicated is true, but we are already possessed of more knowledge with regard to them than is commonly supposed.

In a lecture on "Life" delivered a few months ago, Prof. Brookes, of the Johns Hopkins University, illustrated this as follows: "If I am placed, with my eyes bandaged, before a stone lying free on the surface and am told to kick it, and if I know at the same time the size, shape, and weight of the stone and the character of the surface, I can form a pretty accurate idea as to what the result upon the stone will be. While if the object to be kicked is a dog, and I am given precisely the same data, I cannot tell what will be the effect. But if I can see the dog, I can, in many cases, predict pretty accurately. If he is a bulldog, he will do one thing; if he is a Gordon setter, he will do another." And, in like manner, the old family doctor knows that when a particular disease appears in his neighborhood, he may expect to see it produce in one family convulsions, in another collapse, and, in a third, little or no danger or inconvenience."

This kind of knowledge is, however, at present mainly confined to individuals, it has not become a part of the world's knowledge: it is not defined; in other words, it is not scientific. To make it so, is the work of the future, and in this work I hope that we shall be able to help you.

I have spoken to little purpose if I have failed to show you that there is a great deal of human nature in American physicians, and that it is a kind of human nature with which you are tolerably familiar. It should be so, for we are of the same race, a race which, perhaps, as Emerson says, "sets a higher value on wealth, victory, and material superiority than other men, has less tranquility, is less easily contented." Our ancestors were restless, fighters, free-booters, and from these ancestors we have the common inheritance of energy; of what *we* call "firmness," and our opponents unreasonable, pig-headed, stubbornness; of liking to manage our own affairs, and, at the same time to exercise a little judicious supervision over those of our neighbors; of hatred of humbug, and lying; and, in spite of our discontent, of a firm belief that our wives and children, habits, houses, mode of

[3] See report on Mortality and Vital Statistics of the United States as returned at the tenth census, 2 vols., 4to, Washington, 1885–1886.

business, and of treating disease are, on the whole, better than those of any other people under the sun.

Privately, and between ourselves, we grumble and declare that the country and profession are going to the dogs — nay, we must do so, or we should not be of true English blood, but there is no need for me to tell you that these are only "growing pains," and not symptoms of progressive ataxy.

While we must consider the difficulties in the way of the improvement of the science and art of medicine, difficulties due to ignorance, to indolence, to conflict of interests, and to the eternal fitness of things, the existence of such difficulties is not a matter to be bemoaned and lamented over. These obstacles are the spice of life, the incentives to action, the source of some of the greatest pleasures which it is given to man to experience.

The child, spending a happy hour with its new puzzle, is a type of the scientific investigator. The naturalist who objected to the statement that this is a miserable world which it is well to be soon done with, on the ground that there are still many species of rhizopods which he had not examined and classified, is another type. On the ethical and sociological side, the matter is summed up in Ruskin's aphorism, that "Fools were made that wise men may take care of them."

It is surely not without cause that there has been given to us this restless spirit of inquisitiveness, this desire to compass the heavens and the earth, this raging infinite thirst for knowledge, it is the outcome of brain training and natural selection for thousands and tens of thousands of years.

We are in a period of the world's history characterized by material prosperity, by increase of populations, by tendencies to uniformity, to the making of individuals of small account. According to the Swiss philosopher, Alphonse de Candolle, this is to last a thousand years or so, after which the pendulum will swing the other way, and there will follow a long period of diminution and separation of peoples, and of decadence.

Against that decay of nations we know of but one remedy, and that is increase of knowledge and of wisdom. And this increase must be in *our* knowledge, in the world's wisdom, and not merely in that of John, or Fritz, or Claude.

As each man has special opportunities and duties, if he can only recognize them, so it is with guilds, with professions, and with nations.

I have tried to indicate to you some of these opportunities which are presenting themselves to my colleagues, your brothers, in the lands beyond the sea, and I hope that I shall not be considered rash, or vainglorious in saying that I believe they will so use those opportunities as to return compound interest for what they have received from the storehouse of our common inheritance. Force changes form and place, the stored energy of the soil of our plains and valleys has been coming here in the form of meat and grain, has appeared in muscle and brain, and in a hundred other shapes, but none has been destroyed; our loss has been your gain, and in our turn we have received full and fair exchange.

It is our part now to remember that there are not two springs in the year, there are not two periods of youth abounding in energy and desire, or of manhood's strength and self-poise, in the life of any man or of any nation, and for us, as for those who have been before us, the Kanuri proverb holds true, "*Kabu datsia, kargum bago*"— The days being finished, there is no more medicine.

Original Articles.

WOLPERT'S AIR-TESTER.

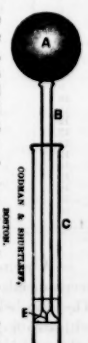
BY S. W. ABBOTT, M.D.,
Secretary, State Board of Health.

For the purpose of ascertaining the quality of the air of inhabited apartments, an instrument is very much needed, which shall combine in itself the following characteristics: convenient form and size, portability, and facility of application or use. Strict accuracy, while desirable, is not absolutely essential.

The thermometer has been in use for many years, and shows the temperature of an apartment at a glance, while the barometer shows the density of the air, the hygrometer its moisture, and the aneurometer the velocity of air-currents in ventilating shafts or ducts. All of these conditions, measured by such apparatus and properly modified, are essential to the comfort of persons occupying such apartments as school-rooms, work-shops, public institutions, lecture-rooms, railway-cars, mines, etc., etc.

On the other hand, when the actual health of the occupant is considered, there is no more important condition than the quality of the air itself in any given apartment, and yet, for the determination of such quality, a convenient, portable instrument is not often found. Those which have hitherto been employed, while possessing the merit of tolerable accuracy, are inconvenient, clumsy, and too expensive for ordinary use.

Recognizing the fact that thus far, no better test of the pollution of air by the products of respiration and combustion has been found than the per cent. of the carbonic acid which it contains (the normal amount in pure out-door air being from 3 to 5 parts per 10,000), the little instrument known as Wolpert's air-tester, described in a recent article by that author,[1] answers the above purpose fairly well when strict accuracy is not required. Some such instrument ought to be found, and used in every school-room, work-shop, or other apartment liable to vitiation of its air.



This little instrument consists of a simple rubber bulb (A), of a capacity of 28 cubic centimeters, a glass outlet-tube (B), with a constriction near its extremity (E). A glass test-tube 12 centimeters in length (C), and 12 millimeters in diameter, has a horizontal mark near the bottom, indicating the point to which it must be filled with perfectly clear lime-water, to contain 3 cubic centimeters. The bottom of the tube is whitened, and has a black mark stamped upon it (D). A small wooden stand, a brush or swab, a vial of vinegar for cleaning the tube, and a bottle of clear lime-water, completes the outfit.

In order to use the instrument, the lime-water (saturated solution) should be poured into the test-tube till it reaches the horizontal mark. Press down the bulb with the thumb, so as to expel the air within it as completely as possible, and allow it to fill

[1] Einfache Prüfung der Luftreinheit in Wohnräumen, von Dr. Wolpert, Prof. in Kaiserslautern. Centralblatt für Allgemeine Gesundheitspflege, Vol. II, p. 231.

with the air of the apartment, insert the small tube into the lime-water nearly to the bottom, and again expel the air with moderate rapidity, so that the bubbles may rise nearly to the top of the tube, but do not overflow, taking care to continue the pressure of the thumb till the small tube is removed from the lime-water. Repeat this process until the mark upon the bottom of the test-tube is obscured by the opacity produced by the reaction of the carbonic acid upon the lime-water, the observer looking downwards through the lime-water, from the top of the test-tube.

With very foul air, it is necessary to examine the mark after filling and discharging the bulb a few times only; with good air, it must be filled twenty-five times and upwards.

The bulb represented in the cut is made a little larger than the required capacity, since a small amount of residual air usually remains in the bulb and cannot be expelled without great care.

After each observation, the test-tube must be washed out and wiped dry. If a white incrustation forms upon the tube, it may be easily removed with a little vinegar, after which the tube should be thoroughly washed with pure water and dried.

If the mark becomes obscured after filling the bulb ten or fifteen times only, the air of an apartment is unfit for continuous respiration.

In a sick-chamber, the air should be so pure that the turbidity of the lime-water will not render the mark invisible until thirty or forty fillings are made.

The instrument should be used by daylight, over a white ground, as a sheet of writing-paper, and care should be taken not to vitiate the result by the observer's own breath.

The following approximate table is taken from the article by Professor Wolpert, the first column representing the number of fillings of the bulb, and the second column the parts per 10,000 of carbonic acid in a given sample of air.

Number of Fillings.	Carbonic Acid per 10,000.	Number of Fillings.	Carbonic Acid per 10,000.	Number of Fillings.	Carbonic Acid per 10,000.
1	200.	21	9.5	41	4.9
2	100.	22	9.1	42	4.8
3	67.	23	8.7	43	4.6
4	50.	24	8.3	44	4.5
5	40.	25	8.	45	4.4
6	33.	26	7.7	46	4.3
7	29.	27	7.4	47	4.2
8	25.	28	7.1	48	4.1
9	22.	29	6.9	49	4.1
10	20.	30	6.6	50	4.
11	18.	31	6.4	51	3.9
12	16.	32	6.3	52	3.9
13	15.	33	6.1	53	3.8
14	14.	34	5.9	54	3.7
15	13.	35	5.7	55	3.7
16	12.5	36	5.5	56	3.6
17	12.	37	5.4	57	3.5
18	11.	38	5.3	58	3.5
19	10.5	39	5.1	59	3.4
20	10.	40	5.	60	3.3

— A writer in the *American Practitioner and News* recommends the following treatment for freckles: The skin being washed and dried is put on the stretch with two fingers of the left hand, and a drop of carbolic acid is applied exactly over the patch. When it dries the operation is completed. The skin becomes white, and the slight sensation of burning disappears in a few minutes.

ABUSE OF MEDICAL CHARITY. — A REMEDY APPLIED IN 3000 CASES OF OUT-DOOR PATIENTS: RESULTS.[1]

BY FREDERICK F. DOGGETT, A.B., M.D.,
District Physician to the Boston Dispensary.

IT is proposed to devote the remainder of this paper to the statement, working and results of a simple plan for preventing abuse of medical charity, adopted by the writer early in 1883, and continued since then in district dispensary practice.

The plan was briefly as follows :— in doubtful cases to ask — 1st, the number of persons in the family; 2d, the united wages or total source of income; 3d, as to the permanency of it, and as to any debts due from previous lack of work; 4th, as to the rent paid. Afterwards, as a supplement to this, to confirm the answers by statements of neighbors. Next, to note the unworthy families.

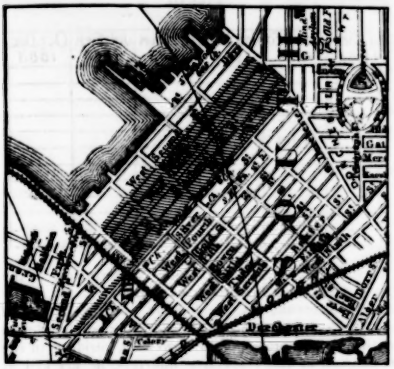
If, in the writer's judgment, on pressing the above questions, the family was unworthy, free treatment was refused except in urgent cases. A family of seven or eight persons, with an income of $30 to $40 per month, was always treated. Not so a family of three persons with an income of $60 to $70. All the circumstances were considered, such as the permanency of income, previous lack of work, or sickness. In cases of refusal to answer questions like the above, the case was judged unworthy. This state of affairs was not infrequent. It must be admitted that that is a lenient judgment which rests on the statements of the defendent, and that in a plan of this kind there is small chance of injustice in the distribution of medical charity — at least so far as the receiver is concerned.

The above questions, in the experience of the writer, could be asked and answered in less than a minute, which is not an unreasonable time to take when it is remembered that it was only at first that many such cases were met with; for apparently, when it was learned that they were likely to be subject to an investigation, such cases became scarce. In this way, the writer believes that there was in the end a saving of time and trouble. This is also borne out by referring to the table, No. I, where we can see that in October, November and December, 1882, the number of cases from the pay-district was much in excess of those coming in the corresponding months of the next year.

The part of Boston in question is that part of South Boston, bounded by portions of Dorchester Avenue, Broadway, and Dorchester Street, and the water of Boston Harbor. (See map.) The shaded portion represents the part of this territory occupied by comparatively well-to-do people, such as mechanics, clerks, shopkeepers, etc. For the most part, these people pay their physician's bills, and are able to do so, with some manifest exceptions. Rents range from $10 per month and upwards. Many own the houses they live in.

The rest of the territory — the unshaded part — is bounded by portions of Second Street, B Street, Athens Street (including both sides), Dorchester Avenue, the water, and a part of Dorchester Street. It is occupied by people of small means, for the most part day laborers, with a few fishermen, junkmen, etc. Rents range from $4 a month to $10 or $12, and as this is the region of large families, there is more or less crowding. It is seldom that families will be found in this district able to pay a full physician's bill.

[1] Concluded from page 106.



For convenience, the former territory will be spoken of as the "pay-district;" the latter as the "charity-district." The time covered in the calculations of Table I, and Chart I, was from October 1, 1882, to October 1, 1885. The number of cases treated in these three years was 2,926; of this number, 2,224 resided in the charity-district; 702 in the pay-district.

In order that the working of the scheme may be shown with its results, the three-years' time has been divided into quarterly intervals. The number of cases treated in each quarter has been reckoned. Further, the cases coming from the pay-district and charity-district, respectively, as above described, have been estimated, and the per cent. in each to the total number. (See Table I.)

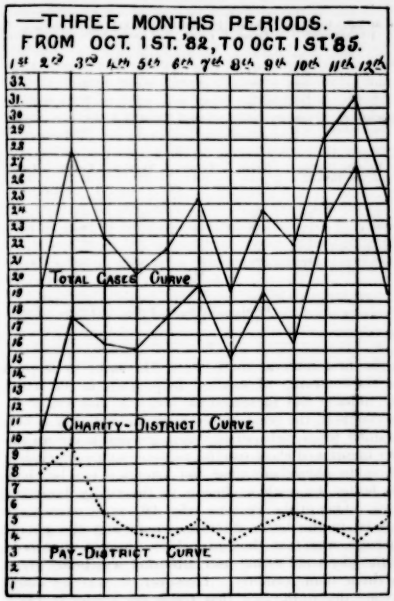
TABLE I.

Time of Experiment.	Total Cases.	Pay-Dist. Cases.	Ch'y Dist. Cases.	% P. D. Cases.	% C. D. Cases.
Oct.-Dec., 1882	195	86	109	44.1	55.9
Jan.-Mar., 1883	281	101	180	37.3	62.7
April-June, 1883	229	62	167	27.6	72.4
July-Sept., 1883	208	47	161	22.6	77.4
Oct.-Dec., 1883	224	43	181	19.2	80.8
Jan.-Mar., 1884	258	55	203	21.8	78.2
April-June, 1884	196	42	154	18.9	81.1
July-Sept., 1884	249	52	197	20.1	79.9
Oct.-Dec., 1884	224	61	163	27.2	72.8
Jan.-Mar., 1885	290	52	238	18.	82.
April-June, 1885	319	43	276	13.5	86.5
July-Sept., 1885	253	58	195	23.	77.

The principal fact that Table I illustrates — namely, the rapid falling off in the number of cases from the pay-district after March 1, 1883, the beginning of active application of the scheme — can be shown still plainer in the chart form. (See Chart I.) The three-months' interval, beginning October 1, 1882, are represented by the spaces between the vertical lines, while the horizontal spaces represent units of tens of the number of cases coming during the respective intervals. The upper curve shows the tri-monthly variation in the total number of cases; the middle curve, the same variation in the number of cases from the charity-district; the lower dotted curve, the same for the cases from the pay-district.

Besides the falling off in the pay-district curve after March 1, 1883, it will be noticed that it continues at a low level thereafter, showing how few unworthy cases came after investigation began. On the other hand,

CHART I.



the charity-district curve attains and keeps a higher elevation; the high point attained by this curve in the 10th and 11th quarters, is due to the fact that there was prevalent an epidemic of measles in the poorer part of the district during the winter and spring of 1884 and 1885. Otherwise, this curve would have been more uniform in character. The rise of all the curves during the first six months of the author's service may, perhaps, be due in part to the fact that he, at that time, came a new man into the district, and on that account was more likely to be imposed upon. It is further explained by the fact that it was, no doubt, influenced by the usual rise coming at the advance of winter, as witness also the rises at the winter periods of the 6th and 10th quarters.

To throw further light on the scheme and its results, a comparison has been made between the number of cases coming from the above-mentioned pay-district, during the six months ending December 1, 1882, and the corresponding six months in the following year — that is, after the scheme had been in use for several months. By the table (Table II) it will be seen that some twenty fewer cases in every hundred of total cases were in the habit of applying for medical charity (also including those cases refused treatment) during the interval from June to November, 1883, than in the same interval in 1882. While in the former interval, 164 persons, in some measure able to pay, got medical charity; in the later interval, under working of the plan, only 95 such persons got such aid. Yet, in the latter interval, instead of there being a smaller number of total cases treated, there was, in reality, an increase of 35 cases. Further, it is to be noted that

TABLE II.

Months Before Experiment.	Total Cases.	Pay-Dist. Cases.	Ch'y Dist. Cases.	% P. D. Cases.	% C. D. Cases.
June, 1882	51	25	26	49.1	50.9
July, 1882	82	35	47	42.7	57.3
August, 1882	45	23	24	48.1	51.9
September, 1882	70	33	37	47.2	52.8
October, 1882	55	26	29	47.2	52.7
November, 1882	73	22	51	30.2	69.8
Months During Experiment.	Total, 378	Total, 164	Total, 214	Total, 43.4	Total, 56.6
June, 1883	62	14	48	22.6	77.4
July, 1883	66	14	52	21.2	78.8
August, 1883	71	17	54	24.	76.
September, 1883	67	16	51	23.9	76.1
October, 1883	85	20	65	23.6	76.4
November, 1883	62	14	48	22.6	77.4
	Total, 413	Total, 95	Total, 318	Total, 22.9	Total, 77.1

in the first interval there were 214 cases in a great degree deserving of medical help, while in the latter, this number had increased to 318. As the writer understands it, the great object of medical charity is best attained when such persons as in general make up the first mentioned class can be to some extent excluded, while the physician's time and attention can be given the better, by such exclusion, to the really deserving class. One of the reasons why 104 more cases were treated in the latter interval, comprising the poorer patients, was, that they probably observed that more of the physician's time and attention was being given to them than formerly. However, it was no doubt further due to the fact that times got harder in 1883, and there was less work; this reason, of course, would apply equally to the pay-district, and yet fewer cases came from this district than in 1882.

CHART II.

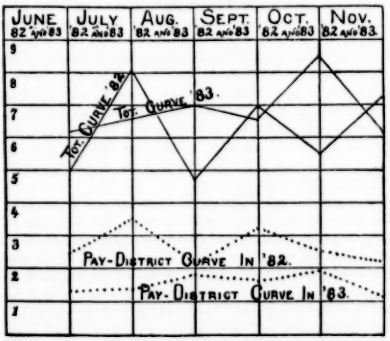
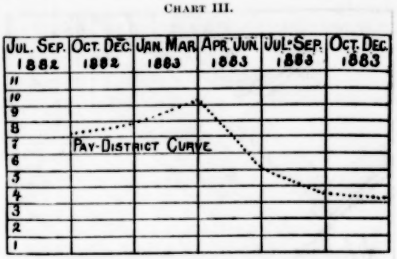


Chart II is supplementary to Table II. In it the horizontal spaces represent units of ten cases, while the vertical columns represent the periods of time. It well illustrates the low pay-district curve in 1883 as compared with that of 1882 — before inquiries were made. It further shows that contemporaneously with this lowering the total number of cases had increased, as can be seen by comparing the total curve for 1883 with that of 1882.

CHART III.



To show in the simplest manner the working of the plan, Chart III has been constructed; six, three monthly intervals, are formed by the time between July, 1882, and December, 1883 — a period of eighteen months. The number of cases treated, residing in the pay-district, in the respective quarters, as marked at the tops of the columns in the chart, were: 81, 86, 101, 62, 47, 43. The horizontal spaces in the columns represent blocks of tens in the number of cases treated. Here, at a glance, one sees the decided effect of the working of the plan when applied in the spring of 1883.

The argument has often been advanced that any attempt to reform abuse of medical charity would lead to scarcity of clinical material for instruction. The writer's figures refute this in a marked manner; for while this scheme was in action, the number of cases coming to the Dispensary increased from 381 in the six-months interval in 1882, to 413 in the like interval in 1883. The number of cases increased in the whole district from 510 in a six-months interval in 1882 and 1883, to 618 in a like interval in 1885. Dr. S. Hall,[2] of New York, says that the Northern Dispensary of that city, at present, treats only two-thirds of the number that it did ten years ago, when indiscriminate charity was given, yet it does more real good in the cause of charity; and that the good done by a dispensary should be measured, not by the number of patients treated, but by their quality as regards their worthiness to receive medical charity.

After completing this paper — the most of which was written some months ago — a thoughtful paper of Dr. Hasket Derby[3] came under the notice of the writer. He seems to have hit upon much the same plan as above detailed, although no results are given as to the working of it, which would be much more difficult in such a field, namely, in an in-patient service made up of patients living over a wide territory. The plan is to combine the duties of an amateur detective with those of the physician, in suitable cases. Dr. Derby says: "passing over other plans, the solution of the whole matter seems to me so simple that I mention it with diffidence. It is but to accept the principle that the out-patient department is for the benefit of those whose lack of means would prevent their obtaining relief elsewhere, and to leave the application of this principle to the physician in attendance." He further points out that "police work" of this description, though distasteful, is not as onerous as would at first sight appear, as in regard to most of the cases, there is little or no doubt. He further continues:

[2] New York Medical Record, November 28, 1885, p. 616.
[3] Boston Medical and Surgical Journal, November 12, 1885.

"and when anything in the dress, manner, or statement of the individual causes hesitancy to be felt, a few questions, put with tact and kindness, will readily resolve the matter; or if any doubt should still be felt, the applicant for aid should certainly receive its benefit. It is not pretended that the medical examiner will be infallible, but we claim that fewer mistakes will be made by him than by any other to whom this task may be delegated."

In taking leave of the subject, I wish here to record my opinion, that by practice of the above-detailed plan, abuse of medical charity in the dispensary district of which the writer has charge has been almost completely stopped. Let the above-mentioned experience and figures bear me out. How far the scheme is applicable to similar practice in other sections is for others to judge.

A NOT WELL-RECOGNIZED SOURCE OF DOMESTIC POISONING, WITH CASES.[1]

BY CHARLES HARRINGTON, M.D., OF BOSTON.

The attention of the medical profession has frequently been called to the poisonous effects produced by stockings, gloves, and other articles of wearing apparel, in the dyeing of which, compounds of arsenic, antimony, and tin have been employed. But so far as I am aware — and I have made numerous inquiries, besides consulting considerable medical literature — little, if anything, has been said or written as to the possibility of poisonous effects from such articles dyed with the aid of compounds of chromium.

The use of chromium mordants has been, until quite recently, comparatively limited, owing to an ignorance of satisfactory methods of application. At the present time, however, they are very generally used, and one of them — the bichromate of potassium — is regarded as by far the most useful mordant for woollen goods. All of them yield excellent results both as to color and fastness, but the bichromate is the most valuable, and capable of the widest application. The employment of any other compound containing an equivalent amount of chromium is said to yield to the woollen fibre the mordanting body (the chromic oxide) not so completely, and to produce colors which are not equal in intensity. The only chromium salt which approaches the bichromate in effectiveness for woollen dyeing is chrome alum, but its use requires the addition of large amounts of bitartrate of potassium, and in any case, it is not equal to the same amount of the bichromate. Besides yielding the most excellent results, the bichromate possesses the additional qualification of being most easily applied.

The range of colors produced by the aid of the chrome mordants with the various dyestuffs is very wide, and includes many shades of brown, brownish-red, claret reds, olives, yellows, old golds, purples, blues, black, buffs, and grays.

It is a well-known fact, that the workmen employed in the manufacturing and handling of bichromate of potassium are almost without exception subject to the so-called "chrome disease," in which severe ulceration of the skin and mucous membranes, and perforation of the nasal septum are the most marked and common symptoms, produced by the irritating and corrosive action of the dust to which they are exposed; and it seems not unreasonable to suppose that under favorable circumstances, equally severe symptoms might be brought about by the wearing of apparel in whose fibre compounds of chromium have been precipitated. And further, it may be assumed that the accidental introduction of dust from the same cloth into the stomach might well be followed by the characteristic symptoms produced by the ingestion of chromates.

I have been informed by a scientific man engaged in the dyeing industry, that such hypotheses are unreasonable, because the chromium is precipitated in the fibre in an insoluble form, but the same objection may be applied with equal force to the cases of poisoning which have frequently been reported as due to the use of arsenic, antimony, and tin mordants, and to the ingestion of chromate of lead.

Although I have as yet been unable to find any reported cases traced to this cause, I can have no doubt that such cases are common, though their cause may not be recognized, for within a comparatively short time several have come under my own observation, in which the cause seems to be beyond dispute.

These cases I will briefly describe.

Case I. The patient, a stout, healthy-looking woman of perhaps forty-five years of age, by occupation a cap-maker, purchased between fifty and seventy-five yards of dark blue cloth for the manufacture of military caps, such as are worn by the boys of the public schools. The cloth was of much more lustrous appearance and considerably cheaper than that which she had ordinarily used. After thoroughly sponging the whole lot, she began cutting out the caps, which occupation required several days. Within a very short time she began to suffer from an intolerable itching of the hands, face, neck, and scalp. At the same time, she began to be troubled with intense thirst, which no amount of drinking could allay. There was much soreness of the eyes, nose, and mouth, burning in the throat, and feeling of discomfort in the stomach. Owing to the heat in the workroom, she dressed as loosely and lightly as possible, so that her body became more exposed to the dust from the cloth than it otherwise would have been. The itching became general, and so intense that she was obliged to remove her entire clothing every day and bathe her body with cream-of-tartar water, which gave only slight and temporary relief. The itching of the scalp caused such constant scratching that she was ashamed to ride in the horse-cars or be seen on the street except after dark, since she was obliged to carry her bonnet in one hand while she scratched with the other. In a very short time after the beginning of the symptoms, there was considerable ulceration of the neck, breast, thighs, and hands. The ears were much swollen, and became, as she expressed it, "running sores." On the hands, the soreness was most marked about the nails. On the completion of the cutting-out process, she began sewing the pieces together to make the caps, and the soreness of the fingers was much increased by the frequent pricking of the needle. There was now very intense pain in the fingers, which, one by one, were disabled and very much swollen. The ulcerations about the nails were much aggravated, and there was sloughing. In a short time she lost three nails from one hand and two from the other. The intense pain, itching, and thirst prevented sleep, and at last she was obliged to give up work. Up to this time she had had

[1] Read at the Annual Meeting of the Massachusetts Medical Society, June 8, 1886, and recommended for publication by the Society.

no idea as to the cause of the trouble, nor had she received medical attention. At last, however, being thoroughly alarmed, she consulted a physician, who concluded that she was suffering from the effects of poison, and advised her to have the cloth examined for arsenic. The cloth was submitted to me for examination and proved to contain no arsenic, but it did contain a large amount of *chromium*.

Work on the cloth was at once discontinued, and in a short time the main prominent symptoms diminished in intensity and disappeared. Her general health is not yet fully restored, although nearly two years have elapsed since the use of the cloth. The symptoms in this case were undoubtedly due to dust from the cloth, which not only was deposited on the skin, but inhaled through the nose and mouth. At the time when the itching of the scalp was at its height, the woman's two children, who lived at home and had nothing to do with the work, began to be troubled with itching and burning in the same place. On inquiry, it was learned that the mother and children used the same hair-brush, and thus the dust had been transferred from her head to theirs.

Some weeks ago, she had occasion to again handle the unmade caps. Each piece was dusted and packed away, the operation requiring considerable time. On the following day, her hands were very sore, the nails being particularly affected, and since that time one of the latter has come away.

CASE II. A clergyman of about sixty years of age, of active disposition and of good general health, purchased a pair of brown mixed woollen gloves, which he wore for three or four days, during which time he took several long walks. His hands have a tendency to perspire freely, though whether they did or not on these occasions he is unable to recall. He noticed a slight redness and irritation of both hands and wrists, but not suspecting the cause, he continued wearing the gloves. Three or four days later the irritation increased. It extended from the middle joints of the fingers to a line on the arms corresponding to the somewhat long wrists of the gloves, and it was this limitation which called his attention to the gloves as a possible cause of the trouble, and they were laid aside. To use his own description, "at first it was in the form of pimples, but afterward many of them ran together and became blotches."

The pain and irritation continued a month or more, during which time considerable ulceration occurred. At the end of another month, the ulcers, which were quite large and deep, had nearly healed. About this time he submitted the gloves to me for examination. They proved to contain no arsenic or antimony, but a large amount of *chromium*.

CASES III and IV.— Two boys, aged respectively five and a half and four years, children of a physician, complained, on the evening of March 28th of this year, of not feeling well, and referred the feeling to the stomach. After the administration of a small dose of aromatic syrup of rhubarb to each, they were put to bed.

At five on the following morning the elder awoke complaining of pain in the ear, of nausea, and pain in the stomach. He soon began to vomit a yellowish watery fluid, which, unfortunately, was thrown away. There was considerable prostration, quick pulse, profuse cold perspiration. He vomited in all about a half dozen times. The gastric pain was very severe all day, and was accompanied by headache. In the afternoon he seemed very heavy and stupid; the headache was now at its worst. The temperature and pulse were high; the cheeks flushed. He complained of pain in the lips, gums, tongue and throat. The lips were swollen; there was intense thirst, which water could not allay.

Meanwhile the younger boy, who had been dressed as usual, began to complain of nausea, and was undressed and put to bed. He soon had all the symptoms of the other, but in no such marked degree. The mouth and gums were very sore.

Up to the time of the first symptoms both boys had been in good health, had not eaten anything out of the ordinary, and had not been exposed to any unusual conditions. In searching for a cause of the trouble there was but one point called to mind wherein their habits and surroundings differed from those of a week and more before, and that was in their clothing. For four days previous to the first symptoms they had been wearing new suits of brown woollen cloth. Their mother, having had a previous experience with arsenic and antimony in stockings, suggested the possibility of poisoning from these substances, and the cloth was submitted to me for analysis. Before testing for the substances mentioned, I looked for compounds of chromium, which when taken internally, produce symptoms similar to those described. The result of the examination showed that *chromium* was present in great abundance.

But in spite of this fact and of the similarity in the symptoms, the diagnosis of chromium poisoning could be ranked only as a possibility. The symptoms in both children were general, whereas one would naturally expect some local action on the skin if due to dust from the cloth. Examination of both boys showed total absence of even slight reddening. It seemed hardly possible that the dust, which, by the way, was given off freely on shaking the cloth, could have produced such severe general and local symptoms. Careful inquiry as to the means by which the dust could have been introduced into their systems developed the fact that one child constantly sucked his fingers, and that the other was in the habit of biting his nails. The diagnosis seemed then more probable, but perhaps not susceptible of verification.

On consultation it was deemed advisable to administer a cathartic in order to remove any possible poison from the intestinal tract, and about 11 P.M., each child was given a dose of castor oil. White of egg beaten up in milk had been given to each some time before the administration of the oil.

The urine was very scanty and contained a slight trace of albumen.

During the early part of the night the elder boy got some sleep, but was constantly tossing and moaning. At four in the morning he had a severe attack of convulsions, with delirium. The younger had twitching of the muscles, but not so severely as the other, and there was no delirium.

The temperature of the elder was 102.6°; pulse 130, weak. The face was very red, and there was profuse perspiration. The temperature of the younger was 101°; pulse 120.

After some time the elder fell into a stupor, from which he could only with great difficulty be aroused. The mouth was swollen, painful and dry. Earache in both was very severe. Both had dejections following

the administration of the oil, and these were saved for examination.

The stupor, high temperature, pain in the mouth and intense thirst of the elder persisted all the next day. His temperature at night was 103.4°; pulse 140. He passed a rather better night, but continued to be dull and stupid in the morning. He complained still of pain in the mouth and tongue; temperature 101.4°. On the following day there was perceptible improvement, though still dull and heavy. There was a return of pain in the ear, and the membrane was punctured. There was occasional pain in the head and abdomen. The urine increased to a normal amount and was free from albumen. Meanwhile the symptoms of the younger had disappeared and he was up and dressed as usual.

From this point onward the elder improved slowly with occasional relapses. Nine days after the the appearance of the first symptoms, he had several bright bloody stools, which were preceded and followed for several days by stools containing much slime. Four weeks later, he had improved very slowly, and was thin, pale and generally out of condition. The dejection first following the administration of the castor oil was subjected to chemical analysis, which resulted in the detection of traces of chromium, thus establishing the diagnosis of poisoning. The bloody stools which occurred on the ninth day would seem to indicate sloughing due to the local action of the poison.

The history of the two last cases present a very remarkable similarity in symptoms to those of two children who were fatally poisoned by very small amounts of lead chromate, reported in Eulenberg's "Vierteljahrsschrift für gerichtliche Medicin," and quoted in all the recent works on toxicology.

Whether in these few cases the compounds formed by the mordant and the dye-stuffs are in themselves the active poison, or are decomposed by the secretions of the body with liberation of simpler chrome compounds, cannot yet be definitely answered.

Reports of Societies.

AMERICAN OPHTHALMOLOGICAL SOCIETY.[1]

CATARACT EXTRACTION WITHOUT IRIDECTOMY.

by Dr. H. Knapp, of New York.

Of the new operative measures which he had seen in Europe there were two above all others which he thought worthy of being tried, one was extraction without iridectomy and the other, advancement of Tenon's capsule. Of the fourteen cataract extractions which he had made since his return the last six had been without iridectomy. Three of these had made ideal recoveries, no reaction, clear, central, movable pupil, neither an anterior nor a posterior synechia. The other three had more or less posterior synechia, leaving the pupil ragged and somewhat obstructed, yet the adhesions were simple, not spreading a pseudomembrane over the area of the pupil. Vision was fair and could be rendered excellent by a simple needling if remaining insufficient.

He followed Panus in the performance of the operation, large section along the upper margin of the cornea, free laceration of the capsule, expulsion of the cataract and its remnants, reduction of the iris with a probe if it did not occur spontaneously. Before the operation the eye is fully cocainized, the lids and conjunctival sac washed and sterilized. The instruments and hands are treated in the same way. After the expulsion of the lens, a small quantity of an antiseptic is injected into the anterior chamber along the whole section and eserine instilled into the conjunctival sac. The speaker believed that the chief advantage of this operation lies in the possibility of keeping the wound perfectly free from foreign substances, including portions of the lens, capsule and iris. How often anterior and posterior synechiæ occurred, what the final visual results were, and how frequently after-operations would be required, were questions which could only be answered by extended statistics.

REPORT OF FIFTY CASES OF CATARACT EXTRACTION,

by Dr. David Webster, of New York.

In seventeen cases the operation was done under ether, in twenty-seven under cocaine, and in six no anæsthetic was employed. The results were successes, 41 cases or 81 per cent.; partial successes, 6 cases or 12 per cent.; failures 3, or 6 per cent.

Aseptic precautions were used in all the operations. The best vision obtained in any case was $\frac{20}{xx}$. Dr. Webster advocated the extraction of both lenses at the same sitting in judiciously selected cases.

Dr. Webster also related the history of a case in which he had relieved the pain in a glaucoma absolutum by lacerating the infra-trochlear nerve (Badal's operation).

DEATH OF A PATIENT ON THE FIFTH DAY AFTER THE EXTRACTION OF A HARD CATARACT,

by Dr. Henry D. Noyes, of New York.

On Sunday morning, the operation, which was perfectly satisfactory, was performed, and the patient suddenly died the following Friday morning. After the operation a bandage was applied and the patient put to bed. The dressing was not disturbed until the third day. Everything seemed to be doing well and the patient made no complaint. On Friday morning she suddenly complained of a feeling of prostration, and within half an hour she died. The only lesions found at the autopsy were dilatation of the heart and insufficiency of the valves of the left side. The death seems to have been due to heart failure. The contents of the orbit were removed *en masse*. A certain amount of force was used and as a consequence the corneal wound was partially ruptured. The eye-ball was hardened and ten sections have been made and they demonstrate the kind of union which we have at the end of the fifth day. Inspection of the eye before death showed that the union was smooth and apparently perfect. What is particularly interesting about these specimens is that the union appears to have taken place exclusively through the medium of the epithelial layer.

DISCUSSION.

Dr. David Webster, of New York. In regard to the use of cocaine, the more I have employed it, the more do I see the necessity of using as little as possible in cataract extraction. Some of my cases that have done badly I think were due to the use of too much cocaine. In my later operations I have done about as Dr. Strawbridge has recommended.

[1] Continued from page 114.

DR. B. JOY JEFFRIES, of Boston. In cataract extractions I have found it of decided advantage to instill cocaine into both eyes. One drop a minute or two before the operation is sufficient. It renders the eye quiet and the patient can keep it open.

DR. C. R. AGNEW, of New York. Probably the best plan to follow in the use of cocaine is to instill a drop of a four per cent. solution and hold the lids open to allow it to become diffused. Then wait three or four minutes. The eye may then be touched with an instrument to ascertain whether or not the sensitiveness has been sufficiently obtunded. One or two drops are usually sufficient and employed in this way the possibilities of evil effects are reduced to a minimum.

It has never been our custom in New York to incarcerate patients in the dark after a capital operation on the eyes.

DR. W. F. MITTENDORF, of New York. I have had two cases of serious complication after cataract which I attributed to the use of cocaine. In one the eye was lost and in the other it came near being lost. The cocaine solutions were fresh, but they were strong and used freely. I have thought that one reason bad results are obtained, is because the eye is left exposed to the air for several minutes after the introduction of cocaine solution. Recent observations show that the injurious action of cocaine is especially upon the epithelial layer and in shutting off the supply of lymph fluid. The epithelium suffers very rapidly from lack of moisture, especially if the eye is kept open. It has been recommended to close the eye immediately after the introduction of cocaine. I use a weaker solution than a two per cent., making it fresh every day by the addition of one or two grains of cocaine to half an ounce of water. Since I have used the weak solution and have closed the eye after its instillation, I have had no serious accident.

DR. WILLIAM THOMPSON, of Philadelphia. In regard to the efficiency of a weak solution of cocaine, I may say that the first time I used cocaine, I directed the apothecary to make a two per cent. solution. Instead he made a solution of two grains to the ounce. I did three operations with it with perfect success and did not find out until afterwards that a mistake had been made. Since then I have not considered it necessary to use strong solution.

DR. EMIL GREENING, of New York. Last summer I went to Dr. Wecker's clinic to see him perform cataract extraction without iridectomy. I learned that he employed this method only in the winter time. The reason for this is, that during the hot weather of summer the patients were very restless and that as a result prolapse of the iris frequently occurred. I decided to try the operation when I returned and on May, 1886, I performed my first operation. Half an hour before the operation I instilled a few drops of a solution of eserine (half a grain to the ounce). A few minutes before the operation, the eye was cocanized with a four per cent. solution. There was no difficulty in removing the lens. After the operation eserine was again instilled and the eye bandaged. Forty-eight hours later, I removed the bandage. The patient made pressure on the eye-ball, the anterior chamber was emptied and the iris prolapsed. I was compelled to remove the iris. There were no further accidents. A few days later, I operated on a second case with perfect success. In regard to the action of cocaine, I may give an extreme example. It was a case of an acute exacerbation in chronic glaucoma. The eye was very painful and very hard. I directed that a six per cent. solution of cocaine should be instilled. A few minutes later on opening the lids and introducing the speculum a bladder arose between its blades. Examination showed that this was the epithelium of the cornea which had become raised. The operation of the sclerotomy which was about being performed was postponed, but it eventually became necessary to remove the eye-ball.

DR. H. D. NOYES, of New York. I have performed extraction without iridectomy in six cases. I have used cocaine, and the cleansing of the anterior chamber and the removal of lens matter, has been accomplished partly by manipulation and partly by irrigation. For washing out the conjunctival sac and removing matter from the anterior chamber I use a rubber bulb holding two or three ounces and terminating in a short nozzle. It is not necessary to introduce a nozzle between the lips of the wound. The iris may be satisfactorily replaced by a stream of water. I have also used eserine not as a preliminary but as a dressing, using an ointment containing two grains of eserine to the drachm of vaseline. A small portion of this is placed in the conjunctival sac and spread on a piece of linen covering the eye. In three of the six cases there was perfect union with a central circular pupil and accurate vision. In one case intra-occular hæmorrhage came on twelve hours after operation, but this might happen under any method. In two cases prolapse of the iris was found on the seventh day when the eye was carefully examined for the first time. The prolapsed iris was excised and in one case the result was entirely satisfactory. In the second case no satisfactory vision was obtained.

The impression on my mind from this small series of cases is, that while the operation deserves attention the cases must be carefully selected. If the patient had but the one eye, I think that I should operate on it with a preceding iridectomy and not without. My belief is that a satisfactory result can be more certainly secured with iridectomy. As to the visual result, while theoretically it should be better it is not always so.

DR. SAMUEL THEOBALD, of Baltimore. In a case in which cocaine was used where there was stricture of the nasal ducts, I invariably observed that after the instillation of cocaine, the cornea which had been clean and bright became dull, presenting the appearance as though it had been roughly handled. I have noticed a similar result in another case.

DR. B. E. FRYER, of Kansas City. In about ten cases I have used cocaine in this way: inserting one drop every half hour until four or five drops have been used. In this way the iris becomes completely anæsthetized, and where we wish to perform iridectomy this is important.

DR. B. ALEXANDER RANDALL, of Philadelphia. There is one point not distinctly referred to in the discussion and that is whether or not inflammation of the iris is more frequent after this operation than where iridectomy is done. In the thirty or more cases which I saw at the clinic of Panas, two years ago, there was not a single case of iritis. There were, however, several cases of prolapse. Panas claimed that there was less inflammation than after the ordinary operation. It is proper to say with reference to iridectomy that with a small iridectomy the pupil may

be as movable and as central as in the operation described.

SOME MEDICO-LEGAL CASES,

by B. Joy Jeffries, of Boston.

The author first read the law of Massachusetts in regard to the examination of railroad employés and others for color-blindness, and stated that it was practically a dead-letter and could not be enforced. In order to make it efficient some standard must be adopted. Many instances in which the law had been evaded were given. Many cases were cited, particularly of railroad engineers and steamboat pilots, where lives of passengers had been endangered by this defect.

Dr. Charles A. Oliver, of Philadelphia, exhibited and read a description of a new series of loose wools for the scientific detection of sub-normal color perception (color-blindness).

They comprise ninety-seven bundles of Berlin worsteds, composed of five large principal test-skeins, twenty small pure match skeins, and seventy-two small confusion skeins. To each small skein there is attached a metallic handle bearing the exact equivalence of the color's composition, tint and shade stamped upon it in a way that can be only understood by the surgeon. The colors are all of equal relative intensity. The wools are all of one manufacture and have been dyed with vegetable materials.

The following advantages are claimed for the series: That there are five tests, that the wools are loose and all of the colors of the same relative intensity, that each skein has its value expressed so that they can be employed by any intelligent layman, that accurate noting of color changes can be made for future comparison, and proper verbal and written expression can be given, that by reason of the wool all being made of the same grade of manufacture and all the colorings obtained from vegetable dyes, no results can be gotten from the supplemental use of touch, and finally, that a black surface is employed and no definite order of testing need be pursued.

Dr. William B. Dennett, of New York, exhibited a set of Holmgren's worsteds, which had been made into spheres, to each of which a number was attached. It was thought that considerable elegance and some advantage would result from using Holmgren's or Thompson's test in this manner.

Adjourned until evening.

FIRST DAY. — EVENING SESSION.

Dr. Samuel B. St. John presented a communication from Dr. Bolton, of Trinity College, to the effect that he had discovered that his grandfather, Dr. North, had founded in New London, Conn., in the Spring of 1817, the first Eye Infirmary established in the United States.

The first paper read was on the

EFFECT OF THE ELECTRIC LIGHT UPON THE EYE,

by Dr. J. A. Andrews, of New York.

The injurious effects of various forms of light upon the eye were first considered and numerous instances cited showing the harmful effect of exposure of the eyes to bright sunlight, bright lamplight, and to the reflection of the sunlight from snow. Cases were given in which a short exposure to the arc-light was followed by swelling of the lids and conjunctivæ. These symptoms yielded to sedative applications. The effects of lightning have been classed with those due to bright light, but they are different. The effects of lightning are probably due to the physico-chemical action of the electric current causing coagulation of the albumen in the crystaline lens. The opacity of the lens occurring among glass-blowers seems to be chiefly due to the intense heat to which the eyes are exposed. The speaker had found lenticular cataract in four per cent. of glass-blowers, under forty years of age, and in twenty per cent. of those over forty years of age whom he had examined.

In considering the relative effect of different forms of illumination, that obtained from gas, from kerosene, and from the electric light were studied. The electric light gives the maximum of light with the minimum of heat. So far, the only cases of injury to the eye from the electric light, have resulted from exposure in close proximity to the intense light of the arc-light. In most of these cases the existence of previous eye trouble was not excluded. The effect in these cases can be best explained as occurring through the sympathetic nervous system rather than as a result of mechanical or chemical influences. It is not established that exposure to bright light can produce a diffused iritis. No case of injury to the eye from the incandescent light has been reported and out of eleven hundred workers with the electric incandescent light examined by the author, there was not one complaint. Those suffering with errors of refraction, claimed that the sight was improved. The light used was from twelve to sixteen candle and provided with a shade to protect the eyes. The incandescent light possesses advantages which are wanting in other forms of artificial light, the principal of which are its steadiness and the fact that its use does not contaminate the atmosphere.

DISCUSSION.

Dr. C. R. Agnew, of New York. We have introduced the incandescent electric light into Columbia College reading-room. All who have made use of it have expressed great satisfaction with it.

Dr. W. F. Mittendorf, of New York. Dr. Andrew's paper confirms the results of my observations. The popular feeling has been against the electric light as injurious, but my experience proves the contrary. The light is so perfect that the work need not be approached so close to the eyes, and the efforts of accommodation are less. On account of its steadiness less work is thrown upon the pupil than with the flickering light of the gas-burner.

The next paper was on

A METHOD OF OVERCOMING DIPLOPIA WHEN PRISMS ARE NOT FULLY EFFECTIVE,

by William S. Little, M.D., of Philadelphia.

Double vision, especially in the lower field, is a source of danger in walking. This is the case, even where prisms are worn, as the patient by not holding the head forwards may look under the spectacle and thus see double. A case of an elderly person with modified paresis of the superior oblique was described. This had led to two severe falls. A prism of six degrees, properly placed, united the double images below the horizontal plane. Above this plane the objects are single. Myopia also existed in each eye and required the combination of a sphero-cylinder with a

prism for the right eye to correct the myopia and diplopia. In order to prevent looking under the glass and seeing double in the lower field, the speaker had resorted to the following procedure. The spherocylinder correcting the myopia of the right eye has been ground opaque for one-sixteenth of an inch above the horizontal plane, so as to obliterate sight in the lower field of vision in this eye. Then there had been attached to the lower portion of the frame, the wire net-work used in protecting glasses. This is carefully adjusted to fit close to the face, the perforations in the gauze having been stopped by painting. Vision is thus cut off below and under the spectacle. In this way, vision for the the affected eye is only through the upper part of the myopic correction and the necessity for a prism is done away with. The other eye has its myopic correction and is the one in which vision in all parts of the field is clear. The right eye is only used in the upper part of the field where no diplopia exists. This is better than entirely closing the affected eye by a ground glass and is found more effective than with the prism, as danger of falling by seeing double is prevented. The same method may be applied to a diplopia in any position in the visual field.

The spectacles as made by Borsch and Rommel were exhibited.

TWO EPIDEMICS OF MOLLUSCUM CONTAGIOSUM,

by DR. W. F. MITTENDORF, of New York.

The contagiousness of this affection has been a matter of much dispute. The two epidemics which had come under his notice had occurred in asylums for children. In the spring of 1885, a little girl having one or two small "warts" on the eyelid was admitted to one of these institutions. In a few weeks other children exhibited similar growths on the eyelids, in some cases spreading to the lips and to the nose. Within three months after the admission of the first case, twenty-seven children were more or less disfigured by this affection.

In the second institution as many as forty children were affected at one time, Some of these children were sent to board with a farmer. One of twenty thus sent out, had molluscum. In a short time the affection spread to over half of the children. It also attacked the child of the farmer and his wife. In a number of cases the tumors involved other portions of the face, but they were most marked on the lids.

As soon as attention was called to the condition, energetic treatment did away with it. Excision with scissors and touching the base with nitrate of silver proved most satisfactory. Simple pressing out of the matter is more painful than excision. Unless the latter is employed the disease is apt to return.

(To be continued.)

— A correspondent of the *British Medical Journal*, who has had considerable experience with hydrophobia, writes that his cases lasted, from seizure to death, three to five days. They were constantly under observation. He found that fluid, when darkened, could be taken in forced gulps, but not from a glass vessel; it could be taken from a cup where the contents were unnoticed until raised. Blindfolding only caused general resistance. Porter was found to give considerable temporary relief.

ANNUAL MEETING OF THE AMERICAN NEUROLOGICAL ASSOCIATION.

JULY 21st, 22d, 23d, LONG BRANCH, N. J.

FIRST DAY.— MORNING SESSION.

DR. BURT G. WILDER, of Ithaca, N. Y., in the chair, on retiring, addressed the meeting as follows:

In view of the fact that he had delivered a somewhat extended address upon a general subject last year, he would confine his remarks to the brief discussion of what he believed to be a new fact, namely, the accurate collocation of a suture and fissure in the human fœtus. In three alcoholic fœtuses in the Cornell University, estimated to be from three to seven months advanced, the lambdoidal suture directly overlies a short but deep fissure which has seldom been noticed, and has been hitherto uninterrupted and may be called the lambdoidal fissure.

A photograph and drawing of one case were submitted: the fissure was very distinct and deep, but had no ental corelative in the cases examined. The doctor remarked that Bischoff and Huxley had regarded the fissure itself as temporary in man, though persistent in apes. Prof. Wilder believed the fissure to persist in man also: but to loose its relation with the suture in the last two months of fœtal life. He mentioned the probability that the coronal suture is similarly related with a pre-central fissure, and closed his remarks with an enumeration of several questions that arise in connection with the subject and with the suggestion as to making use of fœtal brains by careful exposure, preservation, photographing, etc.

Professor Wilder then introduced to the Association, Dr. Charles K. Mills, of Philadelphia, the President of 1886.

DR. MILLS, on taking the chair, made a few introductory remarks on the work of the society and the proposed Congress of American Physicians and Surgeons.

He then presented specimens and described with his usual lucid remarks, the brains of a monomaniac, a murderer, an idiot, a negro, and a Chinaman, drawing attention to the importance of the study of the cerebral convolutions.

The doctor congratulated the Association upon the large amount of published work which had been done by its members since the last annual meeting, instancing the fifth volume of Pepper's American System of Practical Medicine, out of the twenty-four contributions of which, more than one-half were from members of the American Neurological Association. He urged the importance of individual effort towards increasing the membership of the Association, so that it would be in fact as well as in name — the great national representative of those members of the medical profession who are interested in neurology and pschycology, and the branches of science which are specially correlated to those subjects.

He discussed at some length and with approval, the project for the formation of a Congress of American Physicians and Surgeons, he also stated that difficulties might arise in connection with the initiation and inauguration of the Congress. He spoke of danger apprehended by some, that the Congress like another national medical body might drift insensibly into the arena of medical politics, but believed if wisdom prevailed during its development, that such might be

avoided. He thought it would be better for the meetings of the Congress to be biennial, thus allowing the Association as special organization, to have entirely separate and independent meetings on alternate years. He also believed it desirable to have the meetings of the Congress held at a fixed location and thought Washington the most desirable, but that should be decided upon by a committee of conference. He would suggest also that no one should ever be re-elected to the position of President of the Congress; and also that the sessions of the Congress should be held in the mornings in order to allow the various sections to attend to their own special work as in the sections of the American and the British Medical Associations. The doctor also believed it right that the authors of scientific contributions should be allowed the privilege of publishing them in any of the medical periodicals.

The doctor then produced the brain of Burke, a delusional monomaniac, that of Taylor, an alleged delusional lunatic, executed in Philadelphia, also of a feeble-minded youth from the Pennsylvania Training Institution for Feeble-Minded Children, as well as the brain of a negro and a Chinaman. The brain of the Chinaman was first exhibited at the Philadelphia Neurological Society, by Dr. A. J. Parker. Dr. Mills stated that it is the first Chinese brain that has ever been described as far as he knew. In discussing the appearances presented by those specimens he gave what he regarded the peculiarity of human brains of low type and also the differences between simian and human brains. He demonstrated that in the white adult brains presented and also in others of which descriptive notes were read, that there were easily recognized differences between these, and those of individuals of better grade. In all the assimitry was distinctly typical, both of lobes and gyral fissural arrangement, which he believed to exist in a marked degree between the two hemispheres. In general terms the white brains were found to approach more nearly in type the brains of the negro, ape, and to the fœtal brain than is ever the case in an ordinary adult white brain even, in individuals of moderate intelligence and intellectual power. He discussed the question whether these specimens, some of them from men who had committed crimes of violence, who had taken the lives of their fellows, sustained the conclusions of Benedict and others, that the brains of criminals are absolutely distinctive; that we have a criminal type of brain which can even be separated from the type which can be found in other forms of insanity. Such a generalization he regarded as too narrow.

In the brains presented, there were certain points of affinity noted, and points of difference from known conditions of higher human types; these so great as to allow him to put them into a class together as representatives of brains of low types. He regarded the attempt however, to construct a theory as to the anatomical basis of crime, as in some respects unphilosophical; criminals and transgressors of the law being of the most diverse character. The doctor criticized some of Benedict's conclusions although he paid a tribute to his observations and regarded them as stimulating research to a wonderful degree. He thought it strange so little research had been made in the Chinaman's brain heretofore, and that although we have a large negro population but little had been done towards the mapping out of the negro brain. He remarked that no Indian brain had ever been described in detail, and thought some of our army surgeons on frontier posts, who had such great facilities for such investigations should undertake this interesting work. Dr. Mills also stated that he looked in vain for a description of the condition presented by the cerebral surface of an intellectual woman.

DISCUSSIONS UPON SPECIMENS PRESENTED BY THE PRESIDENT.

Dr. Wilder remarked that the subject was worthy the importance which the President had assigned to it, and he was afraid there was a large number of physicians and surgeons who were not as familiar with the brain as they ought to be, and he considered it the highest compliment the President could pay to the Association in speaking in the straightforward manner he had assumed in his paper in relation to the anatomy of the brain. He would like to have examined the brain of the Chinaman more thoroughly, in order to confirm some of Dr. Mill's statements, remarking that, in the negro brain, he had called attention to the exposure of the insular in it; but Dr. Wilder remarked that he had one where it was still more exposed, and in the specimen he spoke of, the brain was hardened in the skull, so that there was no chance of undue pressure; he noticed that the Chinaman's insular was abnormally covered, but he thought it would not do to credit the Chinaman with it, as he noticed the brain had been flattened upon one side, and the first temporal convolution had been pushed over the insular. He also agreed with the President in his remarks upon Benedict's generalization. He thought, however, they merited careful scrutiny. With regard to the confluence of the Rolandic fissure and the Sylvian, he remarked he should hesitate to say anything, but in some twenty or thirty brains that he had, he had never seen the confluence with the central and the Sylvian. The Doctor thought that it would be a difficult matter to find an average brain, and he suspected it was the same with a large number of others; he thought the brains that were studied were more or less peculiar, giving, as an instance: some year or more ago he secured some six human brains for his students to dissect, but upon examination, each of them had some peculiarities, and he concluded they were too valuable for ordinary dissecting. He then asked the President if, supposing he had not known this to be a Chinese brain before him, whether he would have known it, or rather, whether he would have felt disposed to note its peculiarities; if there was anything that would lead him to think it belonged to a different race from our own.

Dr. L. C. Gray, of Brooklyn, remarked that he did not think there was any disagreement among our neurologists as to the one-sided manner in which Benedict's researches were conducted. He thought it was unfair of Dr. Wilder to criticise upon any one point in a paper which contained so many peculiarities until after a careful examination of the specimen. He thought that until some one has determined the limitation of the various convolutions in the human brain, it would be difficult to set the line. There were two points, he said, which had attracted his special attention; the Doctor stated that he had two negroes' brains, and there was some uncovering of the fissure of Sylvius; but he had never seen the fusion of the fissure of Rolando with the fissure of Sylvius.

Dr. Derkum remarked that some months ago he

had exhibited a brain from an epileptic female; the island of Riel was covered on both sides, but on one side the fissure of Rolando was confluent. He also remarked that Dr. Parker had described several fissures which had occurred in a negro brain on the mesial surface, which were afterward ascribed to mechanical causes.

MR. JOSEPH JASTROW, of Johns Hopkins University, by invitation of the President, stated that he had taken twelve or fifteen brains before him for class demonstration, and, after taking plaster impressions, had photographed them, and those where the convolutions came out more fully might be those of the normal brain. He thought with a better knowledge of the brain these smaller changes would teach us to understand the subject.

DR. BIRDSALL thought Benedict's theories were rather strained, but may have stimulated further research. He also opposed the view that one particular type of brain must form that of a criminal. He thought the study of the cranium in different races would be of advantage, but that the study was still in its infancy as to relation between these peculiarities and their functions.

DR. SACHS, of New York, remarked he was naturally interested in the general anatomical bearings of the fissures; he thought we ought to distinguish between the primary and secondary developments of the fissures. He remarked that it would have been important to know the conformation of the skull from which the brain of the Chinaman was removed; this, he thought, might prove an important factor.

DR. WILDER remarked he thought the discussion had been made in regard to the fissures which are considered as primary; he did not think much would be gained by speaking of the secondary fissure.

The PRESIDENT, in reply, said he agreed with Dr. Wilder that it would be better to harden brains in the skull. But in reference to the specimens he had shown, some of them were obtained under great difficulties, and he was glad enough to get the brains as they were. The fissure of Rolando, in one of the cases, was crossed by a convolution, instead of being confluent. It is true, as Dr. Wilder has said, many brains are peculiar, but perhaps it might be due to the reason that most brains we secure are from those of low organization.

In regard to the Chinaman's brain, he would not have known it belonged to a different race, but there was a peculiarity of appearance, but he could not understand what it was. Dr. Parker himself noticed the unusual shortness of the orbital surface. In regard to Benedict, he did not think we should be too severe in our criticisms, but he (Benedict) had a bad manner of generalizing, as he himself thought that criminals did present brains of a peculiar development and conformation; but he believed Benedict's statements to be that with different grades of criminals different types of brain were found; this, the President considered, was unscientific. In regard to Mr. Jastrow's remarks, he thought such experiments were very interesting in regard to studying the higher and lower types, but was not so certain of attaining a standard of the normal brain. The Doctor considered that Dr. Wilder had answered Dr. Sachs's remarks, and that he himself based his remarks upon the primary fissures principally.

(*To be continued.*)

Recent Literature.

Traité Élémentaire d'Anatomie Médicale du Système Nerveux. Par Ch. Féré. Paris: A. Delahaye et Lecrosnier. 1886.

Dr. Féré states in the preface that this is intended for a work on the applied anatomy of the nervous system, somewhat in imitation of Tillaux's anatomy with surgical applications. He has wisely touched but slightly on minute anatomy or at least on points of structure that demand high powers of the microscope for their elucidation. The author is to be congratulated on the clearness of his descriptions, and on the discretion with which has avoided much discussion of disputed points. He describes first the membranes and, to our surprise, adopts the view that the arachnoid is a serous membrane. He holds with Cruveilhier that the foramen of Magendie has no real existence, being simply a rent in the membrane. After the description of the brain, the arteries are considered at some length. The relations of the brain to the head receive due attention, and the author goes at length into the important question, in these days of cerebral surgery, of finding the bregma, or junction of the coronal and sagittal sutures, in the living. It is needless to say that the interesting subject of localizations is a prominent one. Pathological observations are frequently alluded to. We are struck repeatedly by the caution of the author and think that there is little in the book that cannot be received as demonstrated, at least till new discoveries revolutionize, as they well may, our ideas of the physiology of the brain.

After the central nervous system comes the peripheral and that of the sympathetic. In this, the descriptive anatomy is so much out of proportion to the applications that we are inclined to wonder why it was written at all, or why it was not, at least, much condensed. One of the most valuable features of this part consists of diagrams showing the electro-motor points on the surface. There are more than two hundred illustrations in the text, which are for the most part, borrowed. They are well-chosen though often poorly executed. T. D.

Aids to Obstetrics. (*Students' Aids Series*). By SAMUEL NALL, B.A., M.B. 16mo. pp. 142. Paper and cloth. New York and London: G. P. Putnam's Sons. 1885.

This, like the other numbers of the Students' Aids Series, will doubtless be of assistance in preparing for examinations. It is based on the works of Playfair, Leishman, and Lusk, and is in the main a safe guide. There are, however, several matters of opinion to which we should take exception, for example, the explanation given of the internal rotation of the head.

The great objection to these aids is, that the average student, if he thinks he can "pass" by their use, will neglect the larger works: we do not, therefore, believe in these short cuts to knowledge, and think they should be labelled, like certain country roads, "Dangerous Passing," letting the wayfarer take his own risks. And although these by-ways may generally lead safely to the journey's end so far as obtaining a diploma, we advise students to choose the broader, safer, albeit longer, highways to knowledge.

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MEDICINE IN THE UNITED STATES AND CO-OPERATIVE INVESTIGATION.

THE Address in Medicine before the British Medical Association at its annual meeting, held this year in Brighton, was delivered yesterday, by Dr. John S. Billings, of the United States Army, and is given to the readers of the JOURNAL to-day. It will be remembered that the late Dr. Austin Flint, of New York, was originally invited to deliver this address, and after his death what he had prepared was published by his son, the manuscript having been found among Dr. Flint's papers — an example of prompt preparation to meet engagements which many younger men would do well to imitate.

Dr. Flint had selected "Medicine of the Future" as the subject for his address, an editorial notice of which may be found in the JOURNAL for June 17th. Dr. Billing's address is on "Medicine in the United States and its Relations to Coöperative Investigation," and is well worth the space which its length demands from our columns.

The first part of the address, dealing with the present condition and future prospects of medicine in the United States, will naturally have less novelty and less interest for those who think they already know enough about the subject; but even these will find the summing up of the relations of the General Government and the individual States to medicine and to its practitioners a concise and felicitous one for reference. Pretty much the whole of the law and the prophets in regard to legislative regulation of medical practice is really condensed in the following sentences:

"To me it seems that the most important of the first steps to be taken in this direction is one which has already been taken in Great Britain — namely, the requirement that every death in the community shall be registered, and that in such registration satisfactory evidence shall be given as to the cause of death, sufficient at least to prove that such cause is what is known as a natural cause, that is, that it is not due to crime. When it is admitted that one of the duties of government is to provide for such registration, both in the interests of life and to secure the rights of property, it follows, necessarily, that those persons whose certificates as to the cause of death are to be accepted as satisfactory evidence that there has been no foul play, must present evidence that they are properly qualified to make such certificates. The principle is precisely the same as that which induces a government to provide for the examination of the medical men whom it employs in its army and navy.

"So far as the art of medicine is concerned, the demand has much, though by no means all, to do with regulating the quantity and quality of the supply; and there are few localities in the United States where the qualifications of the medical man is not fully up to the standard which the community is able to appreciate and is willing to pay for. In the natural order of things suffering and death are the remedies for ignorance, weakness, and vice, and the means of preventing the transmission of these characteristics to offspring. These remedies, though effectual are drastic, and we do our best to avoid them, but perhaps it is well that the penalties cannot be done away with altogether.

"The laws regulating the practice of medicine in the United States are all State laws. If we were to judge only from what may be found in the statute books, assuming that all the laws contained therein are duly enforced, we should find that nearly two-thirds of the States have laws ostensibly regulating the practice of medicine within their borders. As a matter of fact, however, in over half the States which have laws on this subject no attempt is made to enforce them, and in almost all of them the possession of a diploma, no matter from what source derived, is all that is required."

Dr. Billings, however, recognizes the gradual tendency here, as elsewhere, which the remarkable development of sanitary science, of preventive medicine, of State medicine, has to bring the great body of practitioners into closer relationship with the State — a tendency which, sooner or later, directly or indirectly, will force the State to exercise some control over the practice of medicine.

This leads up naturally to the second part of the address, the relations of medicine in this widely-extended country to coöperative investigation; for preventive medicine is at once a result and an incentive of coöperative investigation, and Boards of Health are, in the discharge of their most important functions, really bureaus of coöperative investigation. Dr. Billings deals with coöperative investigation in a broad and liberal sense, and is evidently not one of those who is unable to see any promise of good to come in the future, because present efforts at coöperation do not realize expectations at the mercy of a narrower field of vision. The coöperation of individuals, urged on by various motives, has given us, through various vicissitudes of progress, medicine as we have it at the present day, but the laboratories for experimental research of the present and the future, the Boards of Health, the Government bureaus, the great medical and scientific organizations, may reasonably be expected to hasten and extend the results of coöperative investigation in a way and to a degree that the blind impulse of isolated individualism would never have indicated. By references to his report on mortality and vital statistics of the United States, as returned at the tenth census, which exhibit some of the peculiarities in the distribution of deaths from certain causes — such as cancer, scarlet fever, diphtheria, pneumonia, consumption — Dr. Billings suggests the contributions to the common fund of medical knowledge which may be demanded from, and furnished by the United States in the future.

Through the Government bureaus at Washington and the State Boards of Health, "Medical Topog-

raphy" is already on the road towards a gratifying state of advancement in this country. And nowhere, as this address justly points out, are such combinations of conditions to be found for studying race problems of disease, which are simply problems of heredity taken in mass; nowhere are natural experiments upon such a grand scale to be observed as regards the effects of various peculiarities of climate, soil, altitude, food, and occupation in connection with variations in parentage under conditions of exposure to the same causes of disease.

We, Americans, need not hesitate to acknowledge ourselves as the heirs of the ages, to confess that we have received freely, for with the recognition of our debt comes the assurance that we can repay it handsomely. Dr. Billings rightly interprets the invitation to an American to give the Address in Medicine before the British Medical Association as an indication that we are thought not only willing, but able to pay some part of our debt to the common fund of knowledge.

LEPROSY IN THE HAWAIIAN ISLANDS.

DR. EDWARD ARNING, of Honolulu, contributes to the Board of Health of Hawaii a valuable report upon leprosy, a subject which in recent years has assumed great importance as affecting that island empire.

The report embraces five topics:

1. Clinical.
2. Pathologic and anatomical.
3. Special bacterial research.
4. Therapeutic.
5. Hygienic.

The clinical work embraces an inquiry into the historical features of the disease, and its symptomatology as found in the Islands. An interesting point of clinical importance is the existence of many cases of *abortive leprosy*, of which Dr. Arning has made careful observation and expresses the hope that these symptoms of arrested disease may be hailed as a proof of a decrease in the virulence of the disease in general.

Under the topic of pathologic-anatomical work, Dr. Arning had conducted seventeen post-mortems of lepers, the result of which would tend to modify opinions as to the disease being confined mainly to external parts. He found grave changes in the larger viscera, especially in the lungs, liver, spleen, and bowels, due to genuine leprous infiltration.

The question of etiology appears to have been carefully studied, embracing a search for the *bacillus lepræ* in the air, water and food, and the attempt to cultivate it in artificial soils of great variety and at different temperatures.

Various living animals were also inoculated, but without results after several months' trial. These negative results have induced Dr. Arning to state the following conclusions:

(1) The bacillus lepræ is a parasite limited to the human race.

(2) It must be transmitted either directly from individual to individual, or

(3) Run through an intermediate stage, which may be present in soil, water or food, into which it only passes from the diseased tissue of a leper.

(4) Accepting either theory, the direct or indirect transmission, we must look upon every individual leper, whether in the incipient or advanced stage, as a dangerous focus of the malady.

(5) The leprous germ requires a certain disposition of the human soil for its propagation. Such a disposition may exist concurrently with apparent good health.

Dr. Arning's experiments upon a condemned convict (whose sentence was commuted for the purpose of submitting him to experiment) are detailed so far as observations have been made. Bacilli were inserted in the arm, September 30th, and were still present in large numbers in the following March. After that time they diminished in number, but were still found in November, fourteen months after insertion.

Of the therapeutics of leprosy, which are classified by the writer as *specific* and *symptomatic*, he acknowledges the uselessness of the former class, so far as experience has thus far tested them. For the symptomatic treatment, considerable benefit, so far as the investigation of local manifestations is concerned, is derived from the use of sulphur, pyrogallic acid, corrosive sublimate and electricity.

Ulcerations of the mouth, throat and nose require the use of antiseptics, astringents, and medicated sprays, all of which alleviate the distressing symptoms for a time.

Hygienic measures. Under this important topic the writer briefly treats of the question of segregation and of the relations of leprosy to vaccination, including the medical examination of school-children. He strongly urges the use of bovine virus as a rule, with careful instructions for its employment in all cases. In support of this advice Dr. Arning vaccinated several lepers, and found the bacillus lepræ in the lymph and also in the crust.

The effect of immigration is also considered, especially from China, the Azores, and Japan, of which the writer says: "It is deplorable, though perhaps inevitable, that these islands, with their terrible abundance of leprosy, should be repopulated by the very nationalities who seem to have not yet overcome the disposition to the disease as much as other races."

Another important question is the *disposal of the dead* bodies of lepers. Leprous tissue was set aside under conditions of temperature and moisture, conducive to slow and thorough putrefaction. An examination of the remains of this tissue made eight months afterward, showed it to consist nearly entirely of "swarms of the bacillus lepræ," closely packed. This experiment prompted an examination of a portion of a body which had been buried three months at the leper settlement at Molokai, and in this instance leprous germs were found present in great numbers. As

a bar to the possible spread of the disease from this cause, cremation and the use of quick-lime are suggested.

In this connection the subject assumes considerable importance as affecting the welfare of our own population; with constant immigration to our western shores of people from the leprous districts of China, Japan and the Sandwich Islands, and to our Eastern ports from Norway, and with existing foci of the disease at San Francisco among the Chinese, in Minnesota among the Norwegians, at the little settlement at Tracadie in New Brunswick, and at a few southern ports, there is reason for the adoption of stringent measures for the prevention of its further introduction and spread.

The progress of the disease in the individual, from the beginning of its incubative stage is slow, but its progress among races or nations is often comparatively rapid. The first recognized case in Hawaii was not noticed till 1853, but in the third of a century which has elapsed, it now threatens the existence of that island people.

With the possibility of a similar spread at any point in the United States, a country having the greatest possible variety of climate, soils, food and other conditions, and also a similar variety of races in its population, it is incumbent upon the government to adopt measures which shall prevent the further introduction of the disease, and secure its limitation to localities where it now exists.

A timely paper by Dr. J. C. White,[1] entitled "The Question of Contagion in Leprosy," urged such a course, including the enactment of strict laws for its prevention, the adoption of quarantine regulations and inspection of all suspected persons from ports where leprosy exists.

MEDICAL NOTES.

— Professor Graskey of Würzburg has been called to Munich to be the successor of the late lamented Professor Van Gudden.

— The sixth International Congress of Hygiene and Demography, will meet at Vienna in September, 1887, instead of 1886, as originally proposed. Among other subjects the precautions, international or others, to be taken against the propagation of contagious diseases by rags; and the international regulations to be adopted against the adulteration of food products, will occupy prominent places in the discussions. Those who are interested are requested to suggest other subjects, addressing Prof. de Gruber, Brunn, near Vienna.

— Dr. Moxon, so long and prominently connected with Guy's Hospital, died suddenly on the 21st ult. After a hard day's work, including an oral examination at the College of Physicians, prior to returning to his house at Highgate, he went to his consulting rooms in Finsbury Circus, where he was engaged for some time in correspondence. As he failed to return home at his usual hour before midnight, messengers were dispatched to Finsbury about two o'clock on Thursday morning, and Dr. Moxon was found to have been dead for some time, lying in his consulting room. The cause of death is at present unknown, but it is supposed to have been due either to apoplexy or to heart disease.

— Instances of extreme old age are reported from Russia. The *Novosti*, a Russian journal, announces the death, in the almshouse of St. Petersburg, of a man aged one hundred and twenty-two years, who had been an inmate since 1818. His mental faculties were preserved up to the time of his death, and his general health was excellent to the age of one hundred and eighteen, when he commenced to fail. There is in the same institution a soldier's widow, whose age, as shown by documentary evidence, is at least one hundred and ten years. In our own country, at New Holland, O., Mrs. Arnold has just celebrated the one hundred and ninth anniversary of her birth; and her two sisters are still living, aged respectively one hundred and six and one hundred and twelve.

— An English contemporary cites a striking instance of the vexatious quarantine restrictions, which prevail in some countries, as afforded by a correspondence, recently presented to Parliament by the Foreign Office, relating to the brigantine *Maggie*, of London, which was called upon, on its arrival at Fayal, to undergo a quarantine of five days, but allowed to discharge her cargo in a lazaretto, the Portuguese authorities having declared Great Britain "suspected" of cholera. Having proceeded to Terceira, the officials there, regardless of the quarantine she had already undergone at Fayal, refused to allow her pratique, and the vessel was relegated to Lisbon. The Foreign Office, recognizing the importance of the case, and supporting the owners' claim for one hundred pounds for the loss sustained, opened communications with the Portuguese Government, through Mr. Petre, Her Majesty's Minister at Lisbon; but no reply was vouchsafed for eighteen months, when the Portuguese Government expressed their opinion that the stringent measures adopted did not constitute any violation of the law, and refused to admit the claim.

NEW YORK.

— The corner-stone of a new infirmary for the Five Points House of Industry was recently laid with appropriate exercises. The building, which will be ready for occupancy in October, is to be four stories nigh, and will have a frontage of twenty-five feet and a depth of eighty feet; with accommodations for about eighty patients. The erection of this infirmary was rendered necessary by an act of the Legislature, passed at the last session, requiring children suffering from infectious eye-disease to be isolated.

— Dr. E. F. Brush, Health Officer of the town of East Chester, in West Chester County, who has lately

[1] Amer. Journ. Med. Sciences, October, 1882.

been engaged in investigating a number of cases of pleuro-pneumonia which have occurred among the cattle of that town, has made a report to the Board of Health, in which he expresses the conviction that the disease originated among the stock of the Mount Vernon branch of the New York Infantile Asylum, which is situated in the same country. The cows there became diseased, so that their milk was unwholesome, and (what seems a most extraordinary procedure on the part of those in charge of the institution), the animals were then sold off at auction. By order of the Health Officer, nearly all the diseased cattle were subsequently killed. The matter is to be reported by the Board of Health to the Grand Jury of the county at its next session.

Miscellany.

DEATH FROM CHLOROFORM.

LADY FLORA WILMOT died at Swansea, England, after taking chloroform in a dentist's chair, for the extraction of a tooth. The anæsthetic was administered by a physician. The patient had taken chloroform twice before without any bad effects. In all, but two drachms were used. All attempts to restore the patient by the use of nitrite of amyl and artificial respiration were of no avail. The physician remarked immediately after the extraction of the tooth, "I hate giving chloroform for you dentists, because you will have your patients sitting up." Both the dentist and the physician were exonerated by the jury which was called to hold an inquest. *Science* comments on this case as follows: "The evidences of the danger in the administration of chloroform are so overwhelming, except in a few cases, that no one is justified, at the present day, in using it in so simple an operation as the extraction of a tooth; and a jury would be doing its full duty in holding responsible for the death of the patient any physician or dentist who administered it in such a case, with a fatal result."

TOILERS AMONG THE DEAD.

AT a recent meeting of the Academy of Medicine, M. Brouardel made known some curious and interesting facts concerning the dead body of a girl, aged twenty-two, which was discovered in a cellar under a heap of straw. The body had lain there about a year, and was in a perfect state of mummification. One of the limbs was shown at the meeting; it was thoroughly dessicated; the tissues were hardened, and gave a sound when struck. MM. Brouardel and Andouard attribute this mummification to the dryness of the soil on which the dead body had been placed; but the most important factors were five different species of acarina which deposited the *débris* of the envelopes of their eggs and carapace among the dust that covered the dried tissues of the body. M. Mégnin has proved that, by studying the generations of acarina which have been at work on a dead body, the date of death can be ascertained. This entomologist, by examining the *débris* of acarina in a child's corpse, ascertained that death occurred two years previously; and a judicial inquiry confirmed this statement. M. Brouardel described the order of succession of the different species of acarina which worked on the dead body of the young girl, also the work of destruction accomplished by each separate species: the gentles (larvæ of flies), *dermestes*, *sarcophagus*, *latierus*, and *lucina cadaverina*. One species absorbs the fluids, another consumes the fatty acids. When a species has finished its work, it dies on the dead body, or is devoured by a succeeding species. Each generation in summer-time lives from six weeks to two months. In a recent case of murder M. Mégnin established with precision the exact date of the burial of the human remains discovered in the garden. Among the remains, a particular kind of ant was observed, which is never found in soil recently disturbed; also the *débris* of acarina, known as *Œsophagus echinococcus*, which also furnished a chronological indication; portions of a bulb of a lily furnished further proof. Two years must have elapsed in order that the bulb should undergo the alterations it presented. M. Brouardel dwelt on the value of these entomological data in reference to medical jurisprudence. — *British Medical Journal.*

INCUBATION OF TYPHOID FEVER.

A CORRESPONDENT writes as follows to the *Lancet* regarding a series of cases in which the minimal period of incubation of typhoid fever was known. Two children left their home in the country to come to a London boarding-school on January 11th. On January 27th the younger of the two sickened with typhoid fever. It was then discovered that at the village where they lived there was quite an epidemic of typhoid, and that the water-supply of the house had become contaminated. The school-master at once wished to know at what date it could be definitely said that the elder boy had not contracted the disease. Wishing to be quite safe in my prognosis, I replied that, although it was impossible to say exactly, if he remained quite well at the end of three weeks and a half, dating from January 11th, he would probably escape. The younger boy was moved from school to a house near, and the master kept a most careful watch over the elder one until the three weeks and a half had expired, at which date he seemed in perfect health. My disappointment was great to find that on February 7th, or twenty-seven days from January 11th, he did not feel quite the thing, and his evening temperature was 100°. Up to this date he had taken his food heartily and was in capital spirits. He later on had troublesome constipation, and died of intestinal hæmorrhage. No other boy in school contracted the disease.

The following is a list of the inmates of this country house who have caught the fever. Where known, I have stated the latest possible date on which the patient could have contracted the disease; of course it may have been contracted much earlier. 1. Younger boy came up to boarding-school on January 11th; recovered; incubation sixteen days. 2. Elder boy came up with No. 1 on January 11th; died of hæmorrhage; incubation twenty-seven days. 3. A sister left home on January 21st to stay with friends; recovered; incubation nine days. 4. A brother left home on January 14th to stay with friends; recovered; incubation sixteen days. 5. The nurse of No. 4; recov-

ered. 6. Cook who lived at the country house and stayed there throughout; recovered. 7. A servant, who come up from country house, and being taken ill was sent to a cottage hospital near, where she was said to be suffering from scarlet fever and sent on to fever hospital, but on inquiry I found it was a simple case of typhoid; recovered.

Correspondence.

TOXIC EFFECT FROM PERMANGANATE OF POTASSIUM.

MR. EDITOR,— I have noticed lately one or two references in your JOURNAL to the use of the permanganate of potassium internally in amenorrhœa and would like to give my own experience and that of my partner.

In the case of a girl of nineteen with advanced phthisis and amenorrhœa of ten months standing, I administered the permanganate in two-grain capsules t. i. d. for two days, which was followed on the evening of the second day by a moderate flow lasting for two or three days. After this the girl's general health improved slightly and the flow appeared the following month just as previous to the commencement of the lung trouble. Subsequently, however, she failed rapidly and died in about two months. My partner, Dr. Brock, on hearing of the success in this case and also that a young married lady had taken five and six grains at a dose, and had had one or two miscarriages while following this treatment under another physician, prescribed two-grain capsules of the permanganate for a young lady, unmarried, twenty-two years of age and somewhat debilitated, who had been suffering from amenorrhœa for four or five months. After the first dose she complained of severe burning pain from the throat to the pit of the stomach, was nauseated, pulse rapid and rather weak. This was supposed to be due to some irritating article of diet and the patient drank a quantity of milk which eased the pain somewhat. The next morning when she took the second capsule there was a repetition of the symptoms of the previous evening, only more severe. The patient was intensely nauseated and vomited, complained of intolerable burning in the stomach and throat, was almost pulseless, completely prostrated and did not fully recover for two or three days.

Subsequently, in the case of another young lady, unmarried, and about the same age and condition of health, who had suffered from suppression of the menses for two months, he prescribed one-grain capsules with the same result, pain like a flaming fire in the stomach and throat and generally symptoms of shock and collapse.

Since then neither of us has prescribed permanganate of potassium internally. Wood, Stillé, and all the authors I have consulted, fail to make any mention of toxic symptoms from the internal administration of the drug.

Are the symptoms due to the rapid decomposition into potassium and the binoxide of manganese?

Before the drug is too freely prescribed in full doses its toxic action should be more carefully investigated and better understood. Yours truly

W. D. BIDWELL, A.M., M.D., (HARV.)

LEAVENWORTH, KANSAS.

REPORTED MORTALITY FOR THE WEEK ENDING JULY 31, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	887	482	39.38	10.56	28.71	.66	4.84
Philadelphia	971,393	389	195	25.22	8.58	7.59	2.34	3.12
Brooklyn	690,000	374	208	36.18	12.34	29.97	—	1.42
Chicago	630,000	324	190	37.51	8.68	22.32	3.72	6.53
Boston	390,406	213	102	35.25	14.57	28.20	3.29	2.85
St. Louis	400,000	168	84	—	—	—	—	—
Baltimore	417,220	202	91	29.89	11.76	20.58	2.94	1.96
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans,	238,000	152	38	17.48	12.92	13.64	.76	3.04
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	103	—	23.28	27.16	16.49	3.88	—
Pittsburgh	190,000	97	58	42 23	3.09	21,63	5.15	2.06
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	49	23	38.76	18.36	36.72	—	2.04
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	33	18	33.33	15.15	24.24	—	3.03
Charleston	60,145	64	30	15.60	9.36	6.24	4.68	—
Worcester	68,383	31	22	48.45	9.69	38.76	6.46	—
Lowell	64,051	40	23	52.50	15.00	50.00	2.50	—
Cambridge	59,660	20	11	35.01	15.00	35.00	—	—
Fall River	56,865	38	26	14.71	10.52	36.82	5.26	—
Lynn	45,861	19	12	47.34	21.04	47.34	—	—
Lawrence	38,825	17	11	41.16	—	41.16	—	—
Springfield	37,577	21	11	42.84	9.52	23.80	4.76	9.52
New Bedford	33,393	14	5	28.56	14.28	28.56	—	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	20	12	35.00	25.00	30.00	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	9	5	55.55	22.22	55.55	—	—
Taunton	23,674	8	6	—	12.50	—	—	—
Haverhill	21,795	—	—	—	—	—	—	—
Gloucester	21,713	8	3	—	12.50	—	—	—
Brockton	20,783	6	1	16.66	—	16.66	—	—
Newton	19,759	9	3	—	—	—	—	—
Malden	16,407	11	3	18.18	18.18	9.09	—	9.09
Fitchburg	15,375	4	2	—	—	—	—	—
Waltham	14,609	5	3	20.00	20.00	20.00	—	—
Newburyport	13,716	4	2	—	25.00	—	—	—
Northampton	12,896	7	3	57.12	28.56	42.84	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 3,226: under five years of age 1,683: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,115, diarrhœal diseases 825, consumption 371, lung diseases 160, diphtheria and croup 100, typhoid fever 61, whooping-cough 39, scarlet fever 29, measles 32, malarial fever 16, cerebro-spinal meningitis 12, erysipelas two, puerperal fever two. From whooping-cough, New York 17, Brooklyn six, Chicago four, Philadelphia and Pittsburgh three each, Baltimore two, Boston, St. Louis, District of Columbia, and Charleston, one each. From measles, New York 14, Chicago six, Pittsburgh four, Brooklyn, Boston, Charleston two each, Nashville and Salem one each. From scarlet fever, New York 10, Pittsburgh five, Chicago and St. Louis four each, Philadelphia two, Brooklyn, Baltimore, District of Columbia and Fall River one each. From malarial fever, Brooklyn seven, Baltimore four, New York and Philadelphia two each, Nashville one. From cerebro-spinal meningitis, New York four, Chicago and Springfield two each, Baltimore, St. Louis, Worcester and Northampton one each. From puerperal fever, Baltimore and Pittsburgh one each.

In the 21 cities and greater towns of Massachusetts, with a population of 1,006,508 (population of the State 1,941,465), the total death-rate for the week was 26.39 against 24.27 and 21.27 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,033,817, for the week ending July 17th the death-rate was 19.7. Deaths reported 3,425: infants under one year of age 1,107: acute diseases of the respiratory organs (London) 167, diarrhœa 411, measles 93, whooping-cough 50, scarlet fever 41, fever 39, diphtheria 17.

The death-rates ranged from 12.1 in Brighton to 24.8 in Manchester; Birkenhead 14.8; Birmingham 16.2; Bradford 20.5; Hull 13.9; Leeds 14.9; Leicester 19.1; Liverpool 18.9; London 21.1; Nottingham 18.7; Sheffield 17.8; Sunderland 16.8.

In Edinburgh 18.2; Glasgow 21.8; Dublin 19.7.

The meteorological record for week ending July 31, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, July 31, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, ..25	29.982	69.1	79.0	60.4	76.0	59.0	87.0	74.0	W.	W.	S.W.	3	12	10	O.	O.	C.	—	—
Monday, ..26	29.846	72.8	76.9	64.8	83.0	77.0	90.0	83.3	W.	S.W.	S.W.	18	4	6	O.	O.	O.	—	—
Tuesday, ..27	29.713	71.5	76.7	70.6	90.0	91.0	81.0	87.3	S.W.	S.W.	W.	8	10	1	O.	R.	C.	—	—
Wednes., 28	29.802	70.9	77.7	62.1	80.0	64.0	73.0	72.3	N.W.	S.E.	S.W.	6	10	12	C.	C.	C.	—	—
Thursday, 29	29.832	77.0	89.3	66.5	78.0	45.0	83.0	68.7	W.	W.	W.	6	15	14	C.	H.	H.	—	—
Friday, ...30	29.840	77.8	85.7	69.3	84.0	62.0	88.0	78.0	W.	W.	E.	12	8	2	F.	F.	C.	—	—
Saturday, 31	29.927	69.8	75.7	67.0	75.0	76.0	84.0	78.3	N.E.	E.	S.W.	7	8	12	O.	F.	C.	19	.56
Mean, the Week.	29.877	72.7	80.1	65.8				77.4											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 31, 1886, TO AUGUST 6, 1886.

MIDDLETON, PASSMORE, major and surgeon. Granted leave of absence until September 10, 1886. S. O. 100, Division of the Atlantic, August 5, 1886

WHITE, R. H., captain and assistant surgeon. Ordered from Angel Island, Cal., to San Diego Barracks, Cal., relieving Capt. Leonard Y. Loring, assistant surgeon. S. O. 64, Department of California, July 28, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING AUGUST 7, 1886.

RUSH, CHARLES D., passed assistant surgeon. Detached from the Receiving Ship, "Franklin," and ordered to the United States Steamship "Pinta."

WILLSON, W. G., passed assistant surgeon. Detached from the United States Steamship, "Pinta," ordered home and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE WEEK ENDING JULY 31, 1886

LONG, W. H., surgeon. Granted leave of absence for fifteen days, July 30, 1886.

SAWTELLE, H. W., surgeon. To proceed to Portland, Ore., and Port Townsend, W. T., as inspector, July 29, 1886.

DEVAN, S. C., passed assistant surgeon. Granted leave of absence for ten days, July 26, 1886.

FATTIC, J. B., assistant surgeon. Granted leave of absence for twenty-nine days, July 26, 1886.

SOCIETY NOTICE.

AMERICAN DERMATOLOGICAL ASSOCIATION. — The tenth annual meeting of the American Dermatological Association will take place at Greenwich, Conn., on August 25th, 26th and 27th, 1886, and the following papers will be presented:

Address by the President, Dr. Edward Wigglesworth: 1. "Report of a Case of Lymphadenoma (Mycosis Fongoide) and Autopsy," Dr. G. H. Fox. 2. "Note Relative to the Bullous Eruption occurring after Ingestion of Iodine Compounds," Dr. J. N. Hyde. 3. "Erythanthema Syphiliticum," Dr. E. B. Bronson. 4. "Rötheln," Dr. I. E. Atkinson. 5. "Precocious Gummata," Dr. R. W. Taylor. 6. "Clinical Notes on Scabies," Dr. F. B. Greenough. 7. "Clinical Observations regarding the Value of Resorcin, Icthyol, and Lanolin in Cutaneous Diseases," Dr. H. W. Stelwagon. 8. "Trophoneurosis of the Skin," Dr. G. H. Tilden. 9. "Native Plants Injurious to the Skin," Dr. G. C. White. 10. "Cartilaginous Tumors of the Skin," Dr. A. R. Robinson. 11. "A Few Additional Notes on Psorasis," Dr. F. B. Greenough. 12. "Report of a Case of Exfoliative Dermatitis," Dr. W. A. Hardaway. 13. "A Clinical Study of Scleroderma," Dr. J. E. Graham. 14. "A Case of Carcinoma Cutis," Dr. L. N. Denslow. 15. "Keratosis Follicularis." Dr. P. A. Morrow. 16. "Surgical and Obstetrical Scarlatina," Dr. I. E. Atkinson. 17. "Notes on Drugs," Dr. H. G. Piffard. 18. "Two Cases of Dermatitis Herpetiformis," Dr. A. Van Harlingen. 19. "Remarks and Queries on and as to Relative Frequency of Moles and their Pathological Changes on the Head and Face," Dr. S. Sherwell. 20. "An Unusual Form of Tuberculosis of the Skin," Dr. G. H. Tilden.

EDWARD WIGGLESWORTH, M.D., *President.*
(per G. H. T.)
G. H. TILDEN, M.D., *Secretary.*

DEATH.

Dr. Calvin Seavey, of Bangor, Me., died suddenly on August 1st, aged seventy-seven. He was graduated from the Medical School of Maine in 1857.

BOOKS AND PAMPHLETS RECEIVED.

The Refraction and Accommodation of the Eye and Their Anomalies. By E. Landolt, M.D., Paris. Translated under the author's supervision, by C. M. Culver, M.A., M.D. With 147 illustrations. Philadelphia: J. B. Lippincott & Co. 1886.

Intubation of the Larynx for Diphtheritic Croup. By E. Fletcher Ingals, A.M., M.D., Professor of Laryncology, Rush Medical College; Professor of Diseases of the Throat and Chest, Woman's Medical College, Chicago. Presented to the Chicago Medical Society, June 21, 1886. (Reprinted from the Journal of the American Medical Association, July 10, 1880.) Chicago: Printed at the Office of the American Medical Association. 1886.

Original Articles.

THE MANAGEMENT OF CASES OF RIGIDITY OF THE OS UTERI IN LABOR.[1]

BY WILLIAM E. BOARDMAN, M.D., OF BOSTON.

A CORRECT appreciation of the condition implied by the term *rigid os uteri*, is a necessary preliminary to its proper management. Many practitioners, indeed some obstetric writers, failing to distinguish between cause and effect, have confounded different conditions of tedious labor where dilatation occurs with abnormal slowness. The os may be soft, yielding, *dilatable*, and yet it may dilate very slowly, or its dilatation may stop entirely, for a longer or a shorter period, from a variety of causes, but it is a misapplication of the term to say of these cases that rigidity of the os or cervix is present and obstructs labor. For instance, quoting from Bedford,[2] "it will occasionally happen that the os uteri does not respond to the efforts of the uterus, the contractions recur at intervals, but they have not sufficient force; the patient becomes wearied with the abortive efforts of nature; her strength gives way, and the nervous system is much disturbed. Here, then, is a condition of things which must not be misapprehended — do not mistake it for rigidity of the os." A similar caution might be enjoined with reference to many other complications of the first stage of labor, among which I may mention obliquity of the uterus, faulty positions and presentations of the fœtus, abnormalities of the fœtus and of the pelvis, hydramnios, constriction of the cervix from compression between the fœtal head and pelvic brim, constriction and hypertrophy of the anterior lip. In these cases, to be sure, rigidity may also occur as a coincident or secondary complication, but, in themselves, they are not usually a cause of this condition; they may, and commonly do occasion delay in dilatation, but they do so merely because they complicate the normal process of labor, but, as soon as the specific complication is overcome by the efforts of nature or by appropriate treatment, dilatation may go on without interruption. In other words, the imperfect dilatation, as a rule, is merely the negative result of these abnormal conditions to which we have referred.

True rigidity, on the contrary, should imply an *undilatable* condition of the os — and this is to be understood in a relative, and not an absolute sense — where dilatation does not ensue, or occurs with abnormal slowness, or is arrested, on account of certain accidental conditions arising at the time of labor — of congenital defects of formation, or acquired physiological or pathological deviations in the structure of the cervix. In these cases, only, the undilatable os is truly rigid, and becomes an efficient cause of delay to labor, and this obstruction may persist, under certain circumstances, so long as to endanger the mother or child, or both together.

The scope of my paper obliges me to omit the consideration of those cases where the dystocia is due to radical defects of development, to complete atresia, and to pathological changes incident to malignant and fibroid disease of the cervix, which often require special methods of treatment, perhaps peculiar to each individual case, and to restrict myself to the discussion of the more common ones to which reference has been made, including spasmodic stenosis, the most usual form in primiparæ, and rigidity from simple pathological changes which appertain to cicatricial, hyperplastic, or hypertrophic induration, and, as a rule, are met with only in multiparous women.

Actual labor, I need not remind you, is commonly divided into three stages, with the first of which only, the period of dilatation, have we to do at present. Strictly speaking, this comprises the entire period occupied in the expansion and retraction of the cervix, and the full dilation of the os uteri. For clinical convenience, however, it is customary to await until the cervix is "taken up," as it is termed now-a-days, before it is considered that labor is imminent. So that, other factors being normal, our attention, at first, is largely directed to the os in estimating the probable character and duration of the labor.

In what may be called normal labors, the length of this first stage varies considerably, according to different circumstances which it is unnecessary for me to enumerate at this time, and it is generally conceded that, so long as the os continues to dilate, however slowly, the membranes are intact, and no extraordinary accidents or emergencies threaten or occur, we are not called upon to abbreviate it in any manner, except indirectly in the way of husbanding the maternal strength by the various methods which are in common use for promoting rest and refreshment, furnishing adequate nourishment, and providing for the due performance of the various ordinary functions of the body.

In such labors this stage may continue for days, and yet with proper attention to these points, neither the mother nor her child may be exposed to any serious injury; the labor may become "tedious," but not "laborious," which latter term properly implies danger in a greater or less degree.

Not infrequently, while all the other factors of normal labor in the first stage occur, delay ensues, which, upon examination, is found to be due alone to the condition of the os itself: it is unyielding and rigid — sometimes thick, hard, and muscular to the feel, at others thin, wiry, like cartilage or parchment, or swollen and œdematous. Even in these cases, except, perhaps, in some few instances of notable cicatricial degeneration, so long as the membranes are unbroken, and the os is pressed upon by the fluid sac during the continuance of the pains, which are intermittent in character, interference is rarely demanded, for the cushion or fluid can do no harm to the cervix, and the fœtus cannot be subjected to undue pressure at any part, for everywhere it is protected from insult by the fluid with which it is invested.

Sometimes, however, it will be observed that, during the pains, the head impinges directly upon the lowest segment of the cervix, so that no bag of waters is formed, and, if the os is rigid, the irritation to which it is subjected by the immediate pressure of the fœtal part, will tend to augment the rigidity, especially in a primipara. If such a condition of things be found, speedy relief may often be afforded by pressing up the presenting part and allowing a quantity of fluid to collect in front of it.

In either of these cases, whenever we meet with an unyielding os under the pressure of the fluid sac, and other factors are normal, it is the rule that the pains tend to become abnormal in character, irregular, short and cramplike, or continuously severe; the patient

[1] Read at the Annual Meeting of the Massachusetts Medical Society, June 8, 1886, and recommended for publication by the Society.
[2] Principles and Practice of Obstetrics, 5th Ed, p. 362,

soon exhibits symptoms of nervousness, perhaps anxiety and irritability, and, if not properly treated, her general and uterine strength will be wasted, to her detriment, probably, in the later stages. Anodynes administered to such patients usually will forestall or control these unfavorable symptoms, and a sleep, more or less prolonged, will be followed by a renewal of strength and courage, and, generally, by a more dilatable condition of the os.

In many cases, however, where the os early shows a disposition to rigidity, an accident occurs which most surely leads to an increase of the dystocia — namely, the premature rupture of the membranes. In other cases, this accident obviously is the prime cause of the rigidity, and, in either instance, we are quite sure to have to do with a laborious labor, which will be the source of much suffering, and even danger, to the mother, and of peril to the child, and, too, of annoyance and anxiety to the physician. Fortunately, with judicious care, and under ordinary methods of treatment, most of these patients ultimately do well, and the mother is safely delivered of a living child.

Probably reasoning from this fact the cardinal rule has been transmitted to successive generations, to abstain from manual or instrumental interference in these cases, and to content ourselves and endeavor to satisfy our patients simply with, what often are merely palliative measures, nauseants, emetics, depletion, general and local anodynes, and to await the favorable issue of this stage or the occurrence of dangerous symptoms in the mother or the death of the fœtus. Until comparatively recent years every kind of interference was deprecated, so long as the fœtal life persisted, and, indeed, craniotomy on the living child has been advised and practised by some in the interest of the mother, and this fact led to the scathing criticism by Lovati, of Pavia, who said, "in England they do not hesitate to kill the child, not only in order to save the mother from the danger of the Cæsarean section, but even to spare her the suffering of the simple application of the forceps." Some obstetricians, writing a century and more ago, advocated, while others of later date have sanctioned or timidly subscribed to, the practice of making longitudinal incisions or scarifications of the cervix in cases of rigidity, where threatening symptoms ensue which do not yield to the common methods of treatment. Indeed in more recent and even modern times, such eminent authorities as Velpeau, Kilian, Martin, Scanzoni, Simpson, Murphy and others have given their assent to this dangerous procedure. Concerning this operation Ramsbotham[3] wisely observed, "I should consider it as one of those exceptional modes of treatment which surgeons are sometimes driven to undertake, in consequence of encountering some extraordinary difficulty, not provided for by the legitimate and established rules governing surgical science." Carl Braun[4] states that the field for this operation is extremely limited, and the necessity cannot occur more frequently than once in fifteen thousand labors. The discussion of this method of practice Lusk,[5] very properly in my opinion, dismisses in a very cursory manner with the following words:— "I have purposely avoided making mention of incisions through the vaginal portion of the cervix, as, in a large experience in difficult labors, I have never so far seen the occasion for their employment," though in his chapter on the forceps he introduces this paragraph[6]:— "In cases where it is necessary to expedite delivery, the resistance of the incompletely dilated os may be overcome by a number of incisions about one-fourth of an inch in depth, made with a blunt-pointed bistoury passed between the cervix and the child's head," adding, "it is very rare, however, that this otherwise trivial operation is really called for."

Contenting myself with this brief reference to the ordinary and extraordinary traditional modes of treatment in these cases, permit me to state, in a few words, the prevailing methods, at least I believe among the most competent practitioners in this country, which, perhaps, are described by no writer more intelligently and tersely than by Lusk, while they are more extensively catalogued by Atkinson.[7]

Premising that the abnormal factor we have to deal with is the rigid os, a stenosis from spasmodic rigidity or due to what I have termed simple pathological changes in the structure of the lower segment of the cervix, in which cases, too, the spasmodic action becomes a prominent feature, the first endeavor is to annul the sense of pain and to restore the disorder of the nervous system, so as to induce relaxation of the spasm, and to foster the maternal strength. This end is sought in different ways, largely by the administration of opiates, but more generally by the use of anæsthetics or of chloral, alone or in succession. In some instances, with multiparous women, where the rigidity appears not to be extreme, external frictions of the uterus and oxytocics are admissible, and among the latter quinine, perhaps, is the safest and best. Ergot, on the other hand, is rightly considered a dangerous agent at this stage for many reasons, nor is Kristeller's method of expression applicable, except in rare cases, until a later period. Electricity has been warmly recommended again of late. Judiciously applied it is said to relieve spasmodic action, to promote dilatation and to increase the regularity and efficiency of the pains. Vaginal and rectal injections of simple hot water or medicated solutions are frequently employed, and apparently with benefit in some cases. Hip baths, also, are serviceable, but generally inconvenient. The local application of belladonna in the form of ointment, I think, is now rarely employed. Not unlikely cocaine will prove to be an important adjunct to our measures for the relief of these cases. Amyl nitrite and atropia, also, have lately been recommended, as efficient agents for relaxing a spasmodic condition of the os. Venesection is rarely employed in these days, and the same may be said of nauseants and emetics, though formerly, of course, much reliance was placed upon all of these. When the os is sufficiently dilated to admit the introduction of the forceps, it is the practice of some eminent obstetricians, notably of Dr. Johnston, of Dublin, to employ this instrument at an early period, and Dr. I. E. Taylor has devised a long, narrow bladed pair of forceps for this purpose, which is said to be capable of introduction through a cervix measuring hardly one and a half inches in diameter. Artificial dilatation of the os has been advised or suggested by many distinguished obstetricians, from the time of Smellie, if not before, while it has been condemned in unmeasured terms by contemporaneous authorities. Thus

[3] Obstet. Medicine and Surgery, 5th Ed., 1867, p. 244.
[4] Lehrbuch der Geburtshülfe, 1857, p. 764.
[5] The Science and Art of Midwifery, 3d Ed., 1886, p. 454.
[6] Op. cit. p. 369.
[7] Therapeutics of Gynæcology and Obstetrics, 1880, p. 239.

Churchill[8] said of it, "I do not deny that dilatation may thus be effected; but I believe it to be hazardous in skilful hands, positively dangerous in unpracticed ones, and unnecessary in all cases;" and Bedford[9] remarked, "the abominable practice, commended by some of the older writers, of introducing the hand into the vagina for the purpose of distending it (the os uteri), is not for an instant to be tolerated. These rude manipulations can never receive the sanction of the scientific accoucheur." Sir James Simpson[10] however, Dr. James Braithwaite in 1879[11] and a few others of later date, have revived, sanctioned and advised the resort to digital dilatation when the rigidity has persisted so long as to induce symptoms of danger. To Robert Barnes is due the credit of demonstrating the advantages of a *more early* resort to artificial dilatation, a practice which is now generally commended by accoucheurs of the largest experience, but he gives his preference without stint to the use of "Barnes' bags" for this purpose. Referring to digital dilatation in the form of dystocia under consideration, after describing with some minuteness the technique of the operation, he says[12] "in some cases in which the second stage of labor has advanced, the cervix may sometimes be dilated by the hand, but," he adds in the same paragraph, "what is called manual dilatation of the cervix should be abandoned, except in the case of spasmodic contraction after expulsion of the child — as, for example, when the placenta is retained or clots are filling and irritating the uterus." Lusk, too, gives his entire assent to the early employment of these dilating bags.

While we may not accept fully the specious arguments of Sir James Simpson,[13] which were largely founded upon the dangerous deductions from statistics or be allured by the ponderous logic of Matthews Duncan,[14] experience, if not common sense, seems to teach that the undue prolongation of the first stage, with the abnormal conditions of ruptured membranes and a rigid os, is attended with danger both to the mother and child, and the danger to both is progressive with the increasing duration of this stage. Therefore it is a matter of great importance for us to determine when this stage is becoming unduly protracted, and, for this purpose, we must have regard both for the mother and for her child. Neglect of this common regard has led to the unnecessary sacrifice of human life and to the opprobrium of the obstetric art. It has been too common to delay too long in order to see what nature can endure, rather than to endeavor to determine, as early as possible, how much she can accomplish. Taking this, then, as the theme for my concluding remarks, permit me, by way of introduction, to recite briefly the histories of two cases, which occurred during one of my terms of service as visiting physician at the Boston Lying-in Hospital.

Case I. Addie S., single, twenty-five years of age, primipara, entered January 28th. From the first she was nervous and despondent. She continued to have pretty constant aching pain in the lower abdomen and sacral region, during the expansion and retraction of the cervix, which was not fully "taken up" until the morning of February 7th, when the os was the size of a ten cent piece, thin and unyielding. The head was low down, at the inferior strait, and the pains were moderately severe, with slight intermissions, during that day. At 6.25, P.M., the membranes ruptured. As no progress ensued, chloral was administered at 7, 7.30 and 8, P.M., with no permanent effect upon the os. At 9, P.M., full surgical anæsthesia was induced and continued for several minutes. Chloral was again given at 11, 11.40 and 12.30, P.M., after which the pains became more severe and nearly constant. At 1, A.M., of the following day, the pains were rather more intermittent and moderately severe, but the os showed no change. At 4, A.M., full anæsthesia was induced for four minutes when the os acquired the size of a twenty-five-cent piece. At 6.30, A.M., it was rather larger than a half dollar; the maternal pulse increased from 100 to 125 and the fœtal pulse from 140 to 160. Under this condition of things I was summoned. Learning from the house physician that under the immediate influence of the chloral or the ether the os each time became dilatable for a brief period, but soon recovered its rigidity, I administered two more doses of chloral, and taking advantage of the dilatability which I produced, I easily stretched the os with the fingers, slipped it over the head, applied the Vienna forceps and readily extracted the child, which was asphyxiated, but fortunately resuscitated. The mother, however, shortly after died, evidently from shock and collapse. There was no uterine rupture and no hæmorrhage.

Reviewing the record of this case, it will be observed that the woman presented unfavorable symptoms from the outset; that she was nervous and despondent; that she suffered, more or less, for more than a week, during the retraction of the cervix; that the os was rigid from the commencement of its dilatation; that the membranes ruptured early in the first stage; that the repeated employment of customary means had little effect in promoting dilatation; that twelve hours after the rupture of the membranes the os was only as large as half of a dollar, when symptoms indicating danger to both mother and child supervened; that the resort to manual dilatation, *while the os was made soft and yielding*, enabled me to deliver a living child in a few moments. Its asphyxiated condition, however, I think clearly showed that a little longer delay would have imperilled its life. As it was, I cannot but think that the fatal result to the mother must be attributed, in a measure at least, to the delay in interference, which was especially dangerous considering her protracted mental agony and the prolonged physical suffering which she experienced, though at no time was this notably severe.

Case II. Ella P., nineteen years of age, single, primipara, entered January 22d, at 11.55, A.M., labor having begun at 1, A.M., of the same day, and the membranes had broken at 7, A.M. On entrance the cervix was "taken up" and the os admitted only the finger tip. Pains recurred quite regularly and with no unusual severity, but it was soon determined that there was delay on account of the condition of the os, which, on the following morning, was the size of a half dollar, thick and rigid. Chloral was twice repeated and snoring anæsthesia was induced, but with slight if any permanent effect. At 4, P.M., of this, the second day, thirty-three hours after the rupture of the membranes, the condition of both mother and fœtus before this having been good, the maternal pulse suddenly rose to 110 and the temperature to 102.8°, while the

[8] System of Midwifery, Am. Ed., 1843, p. 235.
[9] The Principles and Practice of Obstetrics, 5th Ed., 1871, p. 361.
[10] Op. cit.
[11] Trans. Obstet. Soc. of London, Vol. XXI, p. 38.
[12] System of Obstetric Medicine and Surgery, Am. Ed., 1885, p. 744.
[13] Selected Works of Sir J. Y. Simpson, Am. Ed., 1871.
[14] Mortality of Childbed, etc., Am. Ed., 1871.

fœtal pulse increased from 140 to 180. Shortly after this I was summoned, and, finding the threatening symptoms still present, I had the patient etherized, but did not administer chloral beforehand, partly to save time but more because I had in mind that in the previous case possibly the fatal result to the mother might have been promoted by the combined effect of the two agents. While under the influence of the ether, I did not obtain the general dilatable condition of the os which I did in the other case, but the left side dilated readily under the pressure of the fingers, and, having obtained sufficient space, I introduced the forceps,— the head had passed the brim,— and by the combined effects of traction with the instrument and, in the intervals, gradual stretching and pushing up the right side, the os finally slipped over the head, and then the child was quite readily extracted at 6.25, A.M., nearly thirty-six hours after the rupture of the membranes and forty-two after the onset of labor, but it was still-born. The mother made a good recovery.

In this instance, too, I believed I conformed essentially to the general rules of practice which prevail in these cases. The error, in delaying interference too long, or until threatening symptoms supervened, I believe, was the cause of the death of the child, as it was, if not the principal, at all events a contributing factor in occasioning the death of the mother in the first case.

That "meddlesome midwifery" is bad and to be avoided needs no argument at this day, but I submit that, while this expression and the doctrines evolved from it have served a very useful purpose in preventing the indiscriminate resort to manual or instrumental interference, when often it is uncalled for and even unsafe, yet increased experience, I think, rightly teaches me that, in many instances perhaps, we have been controlled too completely by the dictates of traditional practice that have been accepted by successive generations as matters of doctrine which ought not to be questioned, and, with this view, I have come to believe with others that the rule, to await the occurrence of alarming or dangerous symptoms, either in the mother or the fœtus, in these cases where the dystocia is due primarily or essentially to the rigidity of the os, is an excess of conservatism which tends to disaster, as already observed, either from violence done to the mother, or from injury to the child in consequence of the great and direct pressure to which it is exposed for so long a period after the escape of the amniotic fluid or on account of its being deprived of proper and sufficient nourishment by the interference with the utero-placental circulation. Accepting this proposition it is our duty to abbreviate this stage, in these cases of dystocia, so far as we are able to do it.

Referring to the success which has resulted in other forms of dystocia from the practice of manual dilatation, notably with placenta prævia and eclampsia and in the induction of premature labor, as suggested many years ago, even by Hippocrates and Celsus, in some circumstances,[15] but revived and popularized in this country, I think, at all events in this vicinity, by our esteemed associate, Dr. A. D. Sinclair, and also to the now well-recognized effect of chloral and deep anæsthesia for a brief period in bringing about a dilatable condition of the os,— not to mention some other agents which have been employed for a similar purpose,— I believe we not only have it in our power, but that it is our duty, in these cases of tedious labor which promise to become laborious, to afford timely relief by early interference, as soon as we are satisfied that nature unaided directly by art is not likely to accomplish delivery with safety, by following up the temporary dilatable condition, which we can induce by the use of chloral and like agents, with manual dilatation, and the subsequent use of extracting means if they appear then to be required — that is to say, before dangerous symptoms occur.

If the head be above the brim or not far advanced, and the contractions are not too frequent and severe, the early introduction of the hydrostatic dilators of Barnes will, perhaps, accomplish everything that is required; but these are always open to the objection that, even in the most skilful hands, they are insensible and one is liable to effect dilatation with them too forcibly and too rapidly, and so start a laceration of the cervix which may end in extensive rupture. Fortunately, however, if we may rely upon recorded cases, this accident is not a common occurrence. My experience confirms that of many others, that, in a large number of these cases, the presenting part impinges so forcibly upon the os and is so firmly invested by the tissues below the "contraction ring," that the bag cannot be inserted within the os without the exercise of so much manipulation and force as to do violence to the tissues, and, furthermore, in many cases it is found impossible to keep the bag in position, — it will inevitably slip out before dilatation can be effected by it.

With manual dilatation, the principle is the same as with the hydrostatic bag, but employing the former we have the advantage of the tactile sense, which enables us to guide and control the process with the utmost precision and hence with due regard to the integrity of the maternal parts.

When the head has passed the brim and entered the excavation, the waters having escaped, I believe there can be no question as to the choice between these two methods of artificial dilatation, and we should resort without hesitation to the use of the fingers to accomplish the desired object.

I have already alluded to the practice of incising or scarifying the os for the purpose of expediting delivery in these cases under consideration, where no disproportion exists and the dystocia is dependent solely upon the rigid, unyielding condition of the os, whether this is a spasmodic stenosis alone, or associated with the cartilaginous condition which is the product of a cicatricial process, a hyperplasia or hypertrophic induration. All authorities agree that this necessity occurs with extreme rarity. My experience, to be sure, has not been very extensive, but I have never met with, nor have I known of, a case where this procedure became necessary. Indeed, I do not believe it is ever demanded, except in cases of absolute atresia or occlusion of the os, for employing anæsthesia, chloral, and like agents, and artificial dilatation *together*, I feel sure we have it in our power to accomplish delivery, even in the extreme cases of simple pathological degeneration of the cervix, without exposing the uterus to the imminent danger of extensive rupture.

With regard to the proper time when the interference of art is demanded, the essential point is to anticipate the period when dangerous symptoms will occur. As before remarked, while the membranes are intact, rarely will we be called upon to interfere, for,

[15] Vide Braun, op. cit. p. 763.

in these cases, there is practically no danger— nature is equal to the emergency and the patient's endurance is not by any means put to the utmost test.

When, however, the membranes have broken prematurely and the amniotic fluid has escaped, and, I may add, this is the rule in the pathological states of the os to which I have just alluded, and we are satisfied that we have to do with a rigid os, recourse should be had, first of all, to the faithful trial of the ordinary means for promoting a continued dilatable condition. These having been fairly tried, but without success, we should at once resort to artificial dilatation, having first administered an opiate, or better, chloral, either alone or in conjunction with anæsthesia, in order to develop a temporary yielding condition. This latter procedure, I repeat, I offer as an important and essential factor to the easy and safe performance of the mechanical process which we seek to effect by the dilating efforts we decide to employ.

Following these methods of practice which, I have endeavored to show, are based upon sound common sense, regard for the well being of our patients and respect for the obstetric art, I believe we shall be more successful in avoiding unnecessary suffering and in saving human life.

A DISCUSSION OF THE STATISTICS OF OVARIOTOMY.[1]

BY J. C. IRISH, M.D., OF LOWELL.

Of all the major surgical operations, ovariotomy has received the greatest attention with regard to its statistical results. The reason for this is very apparent when we recall its early history. It was an operation very bitterly condemned and assailed by the profession at large at the time of its first performance by McDowell, and for many years after.

Those who believed in its promise of usefulness presented to its opponents their lists of lives saved from a disease otherwise hopeless, and usually soon fatal, as an unanswerable argument in its favor. Although these statistics have long since silenced all question as to the propriety of ovariotomy, still the prominence given them has continued and increased, so that, to-day, the ovariotomist, as a rule, simply presents to the profession his number of operations and the percentage of recoveries, as representing in an exact measure his skill in making the operation, and his wisdom in the details of after-treatment.

The various conditions that determine the result of an ovariotomy, and, at the same time, are beyond the control of the operator, are so much in the background, that the unsuccessful cases gives the profession and the surgeon as well, the feeling that there must have been some fault of omission or commission on his part. That is, such prime importance has been given to the bare statistics as almost to persuade one that the skill of the operator alone is the sole factor in determining the result, and that an ovariotomist of perfect skill and wisdom would save every case. The effect of this tendency to regard the operator as entirely responsible for every unfavorable result has been to stimulate him to the most careful study of every detail of the operation, and, in consequence of this care, the modes of operative procedure have become well-nigh perfect.

[1] Read before the Section of Obstetrics and Gynæcology, Suffolk District Medical Society, May 19, 1886.

This weight of responsibility loaded upon the shoulders of the ovariotomist has contributed, therefore, to his success. It may also have had its effect, not quite so salutary, upon the statistics that have been recorded. It is not unreasonable that the specialist in abdominal surgery, where every failure, in a certain way, reflects upon his skill, and is charged up to his discredit, should present his statistics in the most favorable light that they can bear. Cases in which he may have avoided an operation can be omitted; also those cases of incomplete operation: that portion of his entire list which gives the best percentage of recovery may alone be published.

In other fields of surgery, and in medicine as well, the unreliability of statistics is conceded; but in ovariotomy, for the reason I have given, they are, perhaps, more at variance with the actual results than in the case of other operations. "Statistics alone seldom prove anything, certainly they never explain anything," says Lawson Tait. This, I believe, is not quite true, and, although I am criticising the statistics as not always representing the full proportion of deaths to the recoveries in abdominal surgery, yet I believe they are sufficiently affected by the real results to afford absolute proof of the rapidly-increasing success of ovariotomy.

At the present time, the statistics of ovariotomy in America, when compared with those of our English cousins, seem to show a very decided balance in their favor. One possible reason for this may be that comparatively fewer men operate there than here, and, consequently, that there is a much smaller proportion of operations by inexperienced surgeons, while those who do operate have a much larger experience than falls to the lot of any American. Another reason, and, I believe, the main one, is this, that every standard text-book, at least, so far as I know, except the last edition of Emmet's work, that has been published in America, and which treats at all of ovariotomy, advises postponement of surgical interference, except tapping — "with rare exceptions, a criminal procedure," says Stilling, and assents Thornton — until the failing health of the patient demands it. While in England, formerly, Dr. Clay, Mr. I. B. Brown, Bryant, Hutchinson and Wells advocated early operation before any failure of the patient's strength was apparent. Mr. Wells, however, in 1872, advised delay until considerable impairment of the general health had occurred. Yet in the last edition of his work upon ovariotomy, and in his later utterances upon this subject, he is in accord again with the prevailing English teaching, which favors early operations. In short, I believe that this difference between the English and American authors, in their recommendations given the general practitioner as to the proper time for ovariotomy, has, in great measure, determined the difference in the statistics of the operation in this country and England.

While admitting that in no other operation does so much depend upon the skill, experience, and care of the operator as in this, still it may be worth our while to consider briefly some of those conditions, independent of the surgeon, that may make a disastrous result inevitable. Taking the ovarian cases together, as they present themselves to the ovariotomist, in this country, at least, a certain proportion of them will be found to have in themselves an element of essential fatality. That is, the moment these cases are subjected to operation, they become necessarily fatal, and that,

too, in spite of all care and skill in the performance of the operation, and independently of all accidents that may come at the time of it or afterwards. Every ovariotomist, unless of very limited experience, cannot fail to recall one or more cases of his own that belong to this class, which I have designated as essentially fatal. Cases in which he found conditions of the tumor or patient, or both, such as would necessarily determine an unfavorable issue of the operation — cases in which the ideal operator of perfect skill would have been equally unfortunate. Prominent among the conditions that, in many instances, render an operation essentially fatal, may be mentioned degenerative changes in cyst-walls, cyst-contents, or in the pedicle; twisting of the pedicle, extensive adhesions, particularly within the pelvis, depression of the patient's vitality by septic poisoning, by tapping, by long continuance of the disease, or by the malignant character that the cystoma often acquires.

I have operated in two cases of degenerate cyst-contents, attended, also, with parietal, intestinal, and pelvic adhesions, and with a marked septic condition in each patient. The first case, which recovered, was reported in the *Boston Medical and Surgical Journal* in April, 1884. The second I now briefly refer to in illustration of those cases necessarily fatal on account of the conditions mentioned:

Mrs. F., Pepperell, Mass., age forty. At the time of examination, June, 1884, an apparently solid single tumor occupied the entire abdominal cavity and was firmly impacted in the pelvis. The uterus was held immovably fixed in its position; its cavity of normal length. The case was supposed to be one of uterine fibroma. Patient's temperature 102°, pulse 100. Heart's action feeble, vomiting persistent. An operation was discouraged, more on account of the patient's general condition, than for the reason that the growth was supposed to have been of uterine origin. Two weeks later Mrs. F.'s condition had sensibly improved. With the assistance of Dr. Benoit, Heald, Fletcher, Spaulding and Hartwell, I made an abdominal section and removed two ovarian myomata, which had grown, each from the corresponding ovary, and were so closely joined to each other as to give the impression of a single ovoid growth. Except a small cavity in each filled with pus, they had the firm consistence and structure usual to fibroids. They weighed about [illegible] pounds each. Both were adherent to the [illegible] such it [illegible] of [illegible], the intestines, and the pelvic peritoneum. Very little blood was lost in the separation of the extensive adhesions and the operation was completed as quickly as possible, occupying only about fifty-five minutes. Yet directly after, the patient died from shock. Had this case been in hands much more skillful and experienced than mine, I am sure the result could not have been different. In a word, it was a case with inherently fatal conditions.

In one case with a degenerate pedicle, when the cyst contents were being drawn off with a trochar, a profuse hæmorrhage within the sac, replaced with blood, the liquid removed from the tumor, and, although arrested, as soon as it appeared, the loss of blood was sufficient to cause a fatal syncope. In this instance neither experience nor skill of the operator could have availed in anticipating or checking this fatal hæmorrhage. The element of fatality existed in the patient.

In two cases of extensive parietal visceral and pelvic adhesions, in which I have operated one recovered and the other died. Whether the latter was a case necessarily fatal in itself, or one that might have been saved in the hands of a more experienced and skilled ovariotomist, I cannot say.

In that class of cases, which may be denominated as uncomplicated, simple and recent, and recent cases with rare exceptions are both uncomplicated and simple, I have operated fourteen times with thirteen recoveries and one death. This case I have previously reported. The unfavorable result was, by reason of an accident during the operation, and in a way, the fault of the operator.

For the purpose of making an approximate estimate of the proportion of essentially fatal cases in a large number of ovariotomies, I have collected the reports of six hundred operations by thirty-three different operators, mostly American. These are all cases that have been reported within the past five years, although the operation was performed in some instances somewhat earlier than five years ago.

I have confined myself to these recent operations, because they would contain the smallest proportionate number of deaths from accidental causes, certainly much smaller than the earlier statistics of American ovariotomy would include.

While, of course, it is utterly impossible to make any very exact computation of the number of essentially fatal cases in the list of six hundred, yet an examination of the conditions as existing in very many of those that were unsuccessful, convince one that no mean proportion of them were of this character.

In the entire number there were seventy-five cases of extensive adhesions within the pelvis and elsewhere; of these thirty-three recovered, forty-two died. Although the complete statistics of the different ovariotomists, whose records I am making use of, vary very widely, still in this class of cases, their results are quite nearly uniform. One, reporting the largest number of cases of pelvic adhesions, lost one-half; another eleven out of nineteen; another five out of nine. Therefore, if the most skillful and experienced operators lose rather more than one-half of this class of cases, that is, those with extensive pelvic adhesions, we may very fairly conclude that, at least one-half of [illegible] these essentially fatal, and may place thirty-seven [illegible] proport[illegible] the seventy-five in this category.

Fifty cases of the six hundred were attended with degeneration in some form, of the cyst-walls, of the cyst-contents, or of the pedicle. Nearly all of them were still further complicated by adhesions.

It would seem, too, whenever degeneration, resulting especially from the mature age of the tumor —from its senility— commences with the usual inflammatory action, that, at the same time a great tendency to the formation of adhesions is developed.

Of the fifty cases twenty-six died, and twenty-four recovered. In this class, too, as in the preceding, the results of different operators were nearly the same. No matter into whose hands the patients with degenerate cystomata came, about one-half of them died. So in this second class, we have, practically, twenty-five cases essentially fatal. In the above class are included fourteen cases, that had been tapped, some of them a large number of times, before the operation. Five recovered, nine died. There were eight of these cases, in which the general septic condition before the operation was marked, in which there was considera-

ble elevation of temperature and acceleration of the pulse-rate; six were fatal, two recovered.

Belonging partly to one and partly to the other of the two preceding classes, there were reported ten cases of papillomatous cysts. Six recovered, four were unsuccessful.

Dolan says of these tumors, "They are very intolerant of surgical interference, and are very formidable both for operator and patient." Many of them starting from the parovarium grow between the folds of the broad ligament stretching it over the cyst surface, while others, taking their origin from the nilum of the ovary, often become intraligamentous as their development progresses. These tumors are very bountifully supplied with blood, forming extensive adhesions from their inception, often impossible of removal except by enucleation, growing very closely upon the uterus, even when operated upon very early, make the case a difficult one and sometime necessarily fatal.

Yet, of every variety of ovarian cystoma, this most emphatically demands the earliest possible removal, because of its tendency to degenerative change and rupture, and, because, if it be not malignant from its commencement, it soon acquires that character. An examination of the detailed reports of the six hundred cases, shows several that were essentially fatal from various causes other than extensive adhesions or degenerative changes, yet from causes inherent in the patient and not dependent upon the operator.

Therefore if my deductions are substantially correct, we have in the whole list under consideration, rather more than sixty cases that were essentially fatal. Thirty-seven on account of pelvic adhesions, twenty-five by reason of degenerative changes, and the few additional ones just mentioned.

The statistics of these six hundred ovariotomies, made by thirty-three different operators, reported with sufficient detail to indicate the conditions attaching to individual cases, show an unavoidable fatality in at least one-tenth the whole number. And I have no doubt, that were it possible to obtain an exact history of every other ovarian case and ovariotomy in this country for the past six years, we would find this ratio of essential fatality fully maintained, and, furthermore, could we estimate accurately, those most important factors in determining the result of an ovariotomy, the patient's vitality, power of endurance and of resistance, in relation to the necessary length or severity of the operation, it is probable that we would find our proportion of essentially fatal cases still further increased: and the fatalities for which the surgeon is responsible, in like measure diminished. The American ovariotomist, therefore, operating upon all the cases presented to him — as it is his duty to do with rare exceptions — who has saved ninety per cent. of his patients, is to be congratulated, as having eliminated, practically, all deaths from any lack of skill on his part or from accidental causes.

This proportion, of course, would only hold with large numbers of cases. Those essentially fatal would be too unevenly distributed to make any small number of ovarian operations any criterion of their relative frequency.

In a general way, the deaths after ovariotomy may be divided into two classes:—

(1) Those due to lack of skill or care on the part of the operator, faulty modes of operation, or to accidents.

(2) Those necessarily fatal by reason of the existing conditions of tumor or patient or both.

Looking to the future results of ovariotomy in America, the question of how much it is possible to diminish the fatal statistics of the first class, comes to us. Certainly in the whole range of surgery, there are no operative procedures that require more special preparation and experience than ovariotomy and its kindred operations. Could all patients with ovarian cystomata be in the care of specialists in abdominal surgery, the number of deaths from lack of skill and experience in the operator would be largely decreased, and those from accidents as well, for the latter are avoided by the skill and especially by the experience of the surgeon. In the details of the operation, through its different stages, the modes of procedure are almost universally agreed upon; the only diversity of opinion and practice being in regard to Listerism and the frequency of the use of the drainage-tube.

In short, that degree of perfection has already been attained that would seem to admit of very little future improvement. Whatever advance is made, therefore, in this class, will come mainly from the increasing experience of those who perform the operation.

From this, it follows that if any great improvement in the statistics of American ovariotomy is to take place, it must be by a diminution of those deaths comprised in the second class, namely, those essentially fatal. Fortunately, too, this class contains the larger number of unsuccessful results, and also is the one in which the greatest improvement is possible.

In the twenty-five cases with degenerative changes and the thirty-seven with pelvic adhesions, the element of essential fatality was, for the most part, an acquired one, and had the operation been performed sufficiently early, in the place of this appalling list of fatalities, would have been substituted, less a few cases, a like number of successes.

The list of essentially fatal cases will be nearly obliterated from our statistics, when American physicians shall all agree in regarding a patient with an ovarian cystoma as constantly menaced with great and increasing danger to her life, and shall concur in urging its removal with the least possible delay.

Then will the statistics of American ovariotomy express in full measure the real skill and ability of American ovariotomists.

REPORT ON PROGRESS IN THORACIC DISEASE.

BY FREDERICK C. SHATTUCK, M.D.

HÆMOPTYSIS AND APEX PNEUMONIA.[1]

After briefly relating the histories of five cases Dr. Hood goes on to say: "My desire in this paper is to emphasize the fact that in certain pneumonic conditions a sharp hæmorrhage at the initial stage is symptomatic of the attack, and is, as I believe, directly caused by the inflammatory hyperæmia. In such cases, where a severe hæmorrhage ushers in the attack, we shall find the inflammatory focus very frequently at one or the other apex, and the physical symptoms of such a pneumonia are often more easily demonstrated at the posterior than at the anterior

[1] Lancet, 1886, I, p. 1157.

region of the chest. Such pneumonia, complicated with severe hæmorrhage, is peculiarly connected with lung tissue already the seat of chronic change, whether such change be due to deposition of tubercle or to chronic inflammatory changes." . . . "In the cases of apex pneumonia I have referred to the progress was rapid as compared with an ordinary lobar pneumonia; the patients were not so severely ill. May not the severity of the attack have been mitigated by the local blood-let?"

THE PATHOLOGY OF ACUTE PNEUMONIA.[2]

Dr. Shore brings out very clearly in an interesting paper the wide clinical difference between two classes of cases of acute pneumonia, and thinks that this clinical bespeaks a pathological distinction. Typical pneumonia is of sudden onset, is ushered in by a chill, and terminates by crisis; the fever corresponding in no way to the changes in the lung. The consolidation may persist for some days after the fall of temperature, may first appear after the fall, or may be very ill defined during the whole course of the illness. The author, indeed, speaks of cases coming under his observation, at a time when pneumonia was very prevalent and the hospital wards contained many genuine cases, in which the clinical course was precisely similar to that of pneumonia except that local signs in the lungs were quite absent. These he is disposed to regard as abortive cases of pneumonia, and he queries whether cases of febricula are not sometimes to be classed under this head. The apparent independence between the rational and the physical signs has been used by many writers as an argument in favor of the general and specific nature of pneumonia. That the lung affection is only a local manifestation of a general disease is believed by Dr. Shore to be true as regards the class of cases thus far considered. But the other class, that in which the changes in the lungs and the constitutional disturbance, notably the fever, show close correspondence; the temperature increasing with the local process and, in like manner, gradually subsiding — termination by lesion — is to be regarded as a local inflammation of the lung attended by general disturbance which is purely symptomatic.

Anatomically no distinction can be drawn between pneumonia as a general and pneumonia as a local disease, at least in the present state of our knowledge. It is to be hoped that a careful study of the microbes attending these processes will be made. Dr. Shore, by the way, seems to have overlooked the fact that Friedländer himself has thrown over the capsule of the ovoid pneumonia micrococcus.

How much truth there is in this theory time will show. At present it rests on a purely cliuical basis. The facts of observation and their presentment in the paper are interesting and clear.

PNEUMONIA FOLLOWED BY ABSCESS OF THE LUNG, TREATED BY TAPPING AND DRAINAGE: DEATH.[3]

A laborer, of thirty-six, who three months previously had gone through an attack of left pneumonia, from which recovery was only partial, was admitted suffering from weakness, cough, and fetid expectoration. A large cavity with liquid contents was found at the left base, the rest of the lungs being clear, and a week after entrance a large trocar was plunged into the cavity through the seventh interspace in the back; air and a few drams of stinking pus escaped. A tube was then inserted through the trocar, a carbolic solution was injected, and a large amount of pus was expectorated but nothing came through the tube. During the following days injections were frequently made into the cavity and small quantities returned through the tube; but by far the greater part of the injected fluid, as well as by the secretion, found their exit by the mouth. After a week the patient died, apparently from exhaustion. He thought that the injections promoted his comfort.

Autopsy. "On opening the thorax, both lungs filled their respective cavities. The right lung was adherent throughout to the chest-wall. The upper lobe of the left lung was free from adhesion. The lower lobe was adherent throughout, and so firmly that the lung was torn in removal. A cavity the size of a breakfast cup occupied the whole of the base of the left lung; the wall was smooth, and the cavity contained no pus; the surrounding lung tissue being almost black and solid. A bronchus of the second dimension communicated by two openings with the cavity. The drainage tube had passed into the cavity at a spot rather below its centre. The right lung was engorged and œdematous, and on incising its base pus could be pressed out, showing the passage of this fluid from one lung to the other. Heart normal."

[This case has been abstracted here, not because operative interference with abscess within the thorax is new, but because the manner of interference was wrong in the opinion of the reporter. An operation is clearly called for where there is a slight abscess of the lung, the situation of which is favorable and the pleura overlying which has become adherent. After the confirmation of the diagnosis by means of the trocar a free incision should have been made and a large double drainage tube should have been inserted. The chances of washing out the cavity through the tube would thus have been greatly increased. As it was, the trocar took the place of the second drainage tube, and some of the contents of the cavity evidently found its way into the sound lung during the forced inspiration which accompanied the violent paroxysms of coughing which are specially mentioned in the report of the case. An abscess within the lung with decomposing contents and free communication with the trachea is less favorable for operation than an empyema; but, if its situation permits surgical interference it should be treated as nearly as possible in the same way. Herein lies the main instruction to be derived from the case. The termination might have been the same but the chances of recovery would have been better. — REP.]

THE OPERATIVE TREATMENT OF BRONCHIECTATIC CAVITIES.[4]

Six cases are reported or alluded to by Dr. C. Therdon Williams and Mr. Godlee. In one the cavity was single and a brilliant cure was brought about; in the others success was only partial, largely on account of the fact that the bronchial dilatations were multiple.

The arguments in favor of the operation were:

(1) The tendency to death by septicæmia in some form, unless proper drainage was effected.

(2) The reduction in the amount of the expectora-

[2] Practitioner, May, 1886, p. 321.
[3] Brookhouse. Lancet, 1886, I, p. 111.
[4] British Medical Journal, 1886, I, p. 500.

tion, this being due not only to the removal of the matter, but to the disappearance of the effects of its irritation on the healthy bronchi.

(3) The invulnerability of the lung tissue; it being proved that punctures of this tissue gave rise to little or no disturbance of the part, or to the system generally.

The difficulties of the operation were principally those of diagnosis of the exact position of the bronchiectases:

(1) From the presence of emphysema.

(2) From the reverberatory character of their auscultation sounds which rendered exact localization very difficult.

Paracentecis of bronchiectases seemed to be indicated under the following circumstances.

(1) In cases when antiseptic treatment of all kinds having failed to correct the flow of expectoration, and to allay the harrassing nature of the cough, death by septic pneumonia seemed imminent.

(2) Where the evidence went to prove that the bronchiectases were confined to one lung, were situated in the lower lobe, and had overlying them an adherent pleura. It was not indicated where multiple bronchiectases existed in both lungs, where they were surrounded by emphysema, and where the pleura was nonadherent.

INCISION OF THE LUNG.

Truc[5] collects and analyzes most of the recent cases, the three just noticed are not included.

(1) For acute and subacute abscess of the lung the operation has been done in nine cases with seven recoveries.

(2) For bronchiectasis in ten cases with only two recoveries: it should be noted, however, that most of the fatal cases were in a desperate condition at the time of operation.

(3) In three of the twelve or thirteen cases of tuberculosis more or less improvement followed; but the cases in which an operation can be curative are very few.

(4) Thirteen cases of circumscribed gangrene are collected. In seven cases the cure has been nearly complete; in one marked improvement resulted; in some of the other five cases which proved fatal, temporary improvement was traceable to the operation.

(5) Three cases of hydatid cyst were cured.

(6) Only one case of incision for a foreign body is treated. A tooth fell into the right lung, and caused cavity formation; an incision was made, but repeated attempts to discover the tooth in the pulmonary tissue were unsuccessful. The patient was discharged in better condition.

[The above facts show clearly that there is a future for the operation, at the same time that they indicate its limitations.— Rep.]

VESICULAR RESPIRATION; HOW IT IS PRODUCED.[6]

Dr. Coats has carefully studied the respiratory sounds in a patient whose larynx had been extirpated and who breathed through a vulcanite tube of practically the same diameter as the trachea. It is sufficient here to state that he furnishes conclusive proof that the vesicular murmur is produced in the extreme distal part of the respiratory apparatus. The author's results were submitted to a special committee of the Glasgow Pathological and Clinical Society, one of the members of which committee was Dr. Gairdner, and received unanimous endorsement.

BRONCHIAL RESPIRATION; HOW IT IS PRODUCED.

Dehio[7] after careful experiments with an artificial respiratory apparatus reached conclusions which were essentially the same as those first put forth by Skoda, as to the mechanism of the sounds heard in bronchial respiration. The reporter regrets that lack of space prevents anything more than this mere statement of the fact here.

THE POSITION OF THE FLUID IN PLEURITIC EFFUSION.[8]

Our readers will have no difficulty in recalling the experiments of Garland with reference to this point, some years ago, explaining and enforcing the clinical fact first pointed out by the late Dr. Ellis that in moderate pleuritic effusion the line of dulness is not horizontal. It occurred to Dr. Symington that these experiments were open to two sources of error; the cocoa butter is of a different specific gravity from that of serum, and when injected into the pleura, excite its effects much more rapidly than does an effusion.

Symington succeeded in obtaining the bodies of several children the subjects of effusion, froze them in the horizontal position, and then made sections, sagittal and horizontal. The results support the views of Garland that the lung at first moulds the fluid, the lung being reduced in size but not altered in shape. The fluid enveloped the lung at its posterior, lateral, and superior portions; but did not separate the lower portion from the diaphragm. Symington thinks that this fluid must be pretty large in amount before occupying this supplemental pleural space; but sections must be made of bodies frozen in the vertical or sitting posture before this point can be considered as finally settled.

SHOULDER-JOINT FRICTION AND INCIPIENT PHTHISIS.[9]

Dr. Angel Money calls attention to a sound produced in the shoulder-joint during respiration, which may be heard over the apex of the lung and closely simulate the pleural friction or dry crumple so suggestive of commencing phthisis when heard in this region. The shoulder-joint friction is loudest in the joint itself, and is more readily conducted along the bones than along the muscles. Dr. Gowen first spoke of this sign which has an especial bearing on examination for life insurance.

THE CURABILITY OF PULMONARY PHTHISIS.[10]

Dr. Dettweiler is at the head of an establishment in Falkenstein, in the Tannus Mountains, where, in the course of six years, 1,022 phthisical patients came under treatment; cases which did not remain for at least a month are not included in the above number. Of these, 132 were discharged "cured," 110 "arrested." Of the 132, Dettweiler chose 99, of whom he believed he could obtain trustworthy information, and in all these cases, save one, he received replies either from the patients themselves or from their physicians. During three to nine years 11 had died; 12 had had a

[5] Revue de Médicine, 1886, p. 270.
[6] Lancet, 1886, II, p. 11.
[7] Deutsche Archiv. für Klin. Med., 1886, p. 445.
[8] Edinburgh Medical Journal, March, 1886, p. 834.
[9] British Medical Journal, 1886, I, p. 775.
[10] Fortschritte der Medicin, 1886, No. 3, p. 94.

relapse, but were considered well again at the time of the report; in three the disease was active; the other 72 patients had remained quite well for periods varying between three and nine years, and were pursuing their avocations. More than half of the latter class were under thirty years of age when they first came under treatment. It should be stated that the patients belonged to the well-to-do class. The treatment was simply hygienic in the widest sense. The author expresses the hope it will, in the future, be possible to cure more than half the cases by early and judicious treatment.

[Even at the risk of being tedious, it is proposed to continue to call attention to such careful and conscientious studies as the above seems to be. The more the opinion gains ground among physicians and the public that phthisis is often curable, the more curable it is likely to prove.—REP.]

THE CONTAGIOUSNESS OF PHTHISIS.[11]

A woman whose father, two paternal uncles and an aunt, brother and three sisters, died of phthisis, and who was herself the subject of dyspnœa and hæmoptysis, married, between the years 1872 and 1883, three healthy men of sound parentage. The first marriage was contracted in 1872, and the husband died of phthisis in 1879; the second husband, married in 1879, met a like fate in 1881; the third, married in 1881, was in the last stages of phthisis in 1883, in which year the woman herself succumbed to the disease.

[This series is somewhat remarkable in that the husbands were the victims; the transmission from husband to wife is much more common than is that from wife to husband. Weber relates the case of a husband who infected four healthy wives in succession, outliving them all.—REP.]

ASPIRATION OF THE RIGHT AURICLE: DEATH.[12]

The patient was admitted into the hospital in the last stages of cardiac failure consecutive to mitral disease; dropsy, cyanosis, stupor, and dyspnœa being the prominent symptoms. Stimulants and digitalis proving ineffectual, the next day Dr. Westbrook inserted a small, hollow needle into the right auricle through the third right intercostal space, at the sternal border, and drew off eighteen ounces of blood. "During the operation the radial pulse improved somewhat, and this improvement continued for half an hour. Toward the close of the operation the patient regained consciousness. The respiration improved somewhat, and the color somewhat improved. But, after an hour, he sank again, and died seven hours after the operation." At the autopsy, besides the usual lesions belonging to mitral stenosis with failure of the right ventricle, a considerable amount of blood was found in the pericardium, and "the orifice made by the puncture was still visible, and pressure upon the heart, while, *in situ*, caused a little oozing; the auricular wall was very much attenuated from long over-distension." In other words, the immediate cause of death was clearly hæmorrhage into the pericardium through the puncture.

[Our readers may remember that this operation has been practised by Dr. Westbrook several times of late years, and has been strongly advocated by him and by Dr. Leuf, of Brooklyn, in the medical journals. It is to be hoped that the unnatural operation may now be allowed to die a natural death. In such cases as that reported, the abstraction of blood from the veins is clearly indicated, and often yields astonishing results; drugs given by the stomach are not absorbed, or fail to act. But the blood should be withdrawn either by venesection or by the application of a dozen leeches over the liver — methods which attain the same end by unloading the distended right ventricle, and in themselves involve no danger to the patient, even if, as must sometimes be the case, he is too far gone for relief. Dr. Westbrook is to be thanked for reporting his bad cases, as well as his good.—REP.]

CONGENITAL STENOSIS OF THE DESCENDING AORTA.[13]

M. Barié, having met with two cases of this condition, has been at the pains of collecting the cases reported during the last hundred years, a total of ninety-one. The paper is very full, and of the twenty-three conclusions in which it is summed up, we select those of most practical importance:

(2) The localization is constant, the stenosis occupying the region between the ascending and descending aorta, which corresponds to the "isthmus of the aorta" of fœtal life, and reaching its maximum a little below the point where the left subclavian is given off, at or near the entrance of the ductus arteriosus.

(3) The stenosis is generally single; when it is double, the interposed segment of the aorta is almost always dilated.

(8) The dimensions of the stenosis are variable: the average length is about 0,020 millimeters; the calibre varies from that of the little finger to that of a hog's bristle.

(9) The wall of the aorta is sometimes normal in other respects at the contracted point, but in more than a third of the cases atheromatous changes were found, and, exceptionally, the coats were thinned.

(10) In more than half the cases, the aortic segment between the heart and the stenosis was dilated, and death has not infrequently resulted from rupture of the aneurismal enlargement. The distant portion of the aorta may also be dilated.

(12) The ductus arteriosus is nearly always obliterated, but was more or less patent in eight cases.

(13) The condition brings in its train changes in the heart, and also in the great arteries.

(a) The cavities of the heart are dilated, and the left ventricle is often hypertrophied, changes which may be intensified by secondary valvular lesions.

(b) In consequence of the dilatation of the large arteries given off from the aorta, the circulation in the heart and upper extremities is maintained, or may be unusually active; while in the thorax, abdomen, and lower extremities it is strikingly modified, being carried on principally by branches from the subclavian.

(14) In thirty-eight per cent. of the cases there was also some other congenital malformation, such as abnormal communication between the cavities of the heart, hair-lip, cleft palate, etc.

(16) As regard symptoms the cases may be divided into three groups:

(*a*) In numerous cases the lesion was not recognized during life and was found accidentally at the autopsy.

(*b*) In other cases patients consulting a physician for some ailment were recognized as the subjects of stenosis of the aorta although this condition had not of itself resulted in any impairment of health.

[11] Lasetsky, Revue des Sciences Médicales, 1886, I, p. 832.
[12] New York Medical Journal, 1886, I, p. 447.
[13] Revue de Médecine, 1886, p. 343.

(c) The third and largest class included those who suffered from the symptoms of chronic heart disease.

(21) The prognosis is relatively favorable, many of the patients dying in advanced years. The average age of all the cases was thirty-four years.

(22) In diagnosis, mediastinal tumor, aortic aneurisms, and all causes of intra-thoracic pressure must be excluded.

(23) The affection depended on an arrest of development of the isthmus of the aorta, which seems to be the result of premature closure of the ductus arteriosus; traction is thus exerted on the isthmus of the aorta and its physiological growth is impeded.

No satisfactory explanation can at present be given for the rare cases in which stenosis of the aorta and patency of the ductus arteriosus, are co-existent.

ENDOCARDITIS OF THE RIGHT HEART.[14]

Dr. Byrom Bramwell subjected to a careful analysis all the cases of valvular disease which came to the post-mortem table during the three years that he was pathologist to the Edinburgh Royal Infirmary. The number of cases presenting marked eye evidence of valvular disease was one hundred and thirty-one, and of these eighty-three were classed as simple endocarditis; the tricuspid valve was affected in twenty-nine per cent. of these, and in most of them the lesions were of more or less recent origin.

The following are the most important practical conclusions to which the investigation has led the author:

(1) Pathological experience shows that right-sided endocarditis is much more common than is usually supposed, and this conclusion is in no way contradicted, but on the contrary rather confirmed, by clinical evidence and clinical facts.

(2) That a tricuspid murmur occurring in the early stages of acute rheumatism in a previously healthy person who is not anæmic, is indicative of a rheumatic affection of the right heart.

(3) That although right-sided endocarditis is of frequent occurrence, it is comparatively seldom followed by permanent organic disease of the tricuspid valve; in short that right-sided endocarditis is an eminently curable affection.

If these conclusions are correct and tricuspid is less liable to be followed by permanent damage than mitral endocarditis, do we not receive from Nature an important therapeutic hint? What reason can be assigned for the relative immunity of the tricuspid other than the relatively slight strain to which it is subjected? A new illustration of the importance of rest in the treatment of acute valvular disease is thus afforded.

— The *Boston Advertiser* says: "A physician of large experience remarked the other day that when he began the practice of medicine he was worried because people put so little confidence in him, and now he was troubled because they trusted his judgment so implicitly. He seemed to think that to be thought infallible was far more burdensome than to have one's fallibility emphasized as in his younger days."

— Irish Tramp. — "Is this a lying-in-hospital, mister?" Janitor.—"Yes, this is a lying-in-hospital." Tramp. — "Then I guess it's the right place for me, for I've been lying out these three nights."

[14] American Journal of Medical Science. 1886, I, p. 419.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION OF OBSTETRICS AND GYNÆCOLOGY.

ROBERT B. DIXON, M.D., SECRETARY.

May 19, 1886, Dr. James R. Chadwick in the Chair.

Dr. J. R. Chadwick reported

A CASE OF EXTRA-UTERINE FŒTATION, WITH PRESENTATION OF THE SPECIMEN.

Dr. John Homans showed a very beautiful specimen, the result of an abdominal pregnancy of seven years' duration. The bones of the skeleton, almost wholly complete, had been mounted by Dr. O. K. Newell. The case is described at length in the *Boston Medical and Surgical Journal*, May 20, 1886, Vol. CXIV, No. 20.

Dr. O. W. Doe mentioned a case that he reported two years ago. It was that of a colored woman who came to the City Hospital to be treated for diarrhœa. Upon examination, a mass of bone was found projecting into the rectum. Ether was given, and the mass, which had sloughed, came away easily. The only bones in it were those of the skull. The woman's statement was that she was last pregnant eight years before.

Dr. E. G. West, whose case was the one operated upon by Dr. Homans, said that the peculiarity of the case was the two cysts beside the fœtal sac. It was a question with him whether the fœtal remains might not have been the contents of a dermoid cyst.

Dr. Fitz remarked that in the dermoid or congenital cysts one does not find such large bones as in this case, so probably these bones were the result of pregnancy.

Dr. J. C. Irish, of Lowell, read a paper entitled

DISCUSSION OF STATISTICS OF OVARIOTOMY.[1]

Dr. John Homans thought that the ratio of recoveries and deaths depended largely on the operator. For himself, he had had, out of cases entirely unselected, thirty-eight successive recoveries and sixty-seven cases, with four deaths, but this is a better average than that of the whole two hundred and fifty ovariotomies that he has done, in which the recoveries are very nearly ninety per cent. Now, by selection, this percentage may be improved. If an operator has an assistant to whom he can turn over the doubtful cases, of course he will be able to make a better showing. Dr. Homans feels that in most of his fatal cases the result is to be attributed to some omission or commission on his part — some slip up; or being a little tired, or a little hurried, and he feels this not in a morbid way at all, but only as making him take more pains and precautions with every succeeding case. Some of the deaths after ovariotomy are unexpected and unexplainable. When a simple operation is followed by death, and the autopsy shows no adequate cause, we say the woman died from "septicæmia," and so she did, but all we know is that she died in consequence of ovariotomy. If a man has a hundred recoveries in succession, it would seem as if he must have had a remarkable series of cases if they were *entirely* unselected. Experience and surgical resource goes a long way in obtaining good results. As a general rule, the earlier

[1] See page 153 of this number of the Journal.

the operation, the better the result, but there may be such a thing as too early an operation. It will not do to wait in most cases of papilloma, but you cannot tell that the tumor is papillomatous until you remove it. There is no operation in surgery where experience is of more advantage than in ovariotomy, and one might say the same of abdominal surgery generally.

Dr. Lyman thought that there are certain cases that are essentially fatal, and that Dr. Homans was wrong in taking any blame to himself for a certain portion of his deaths.

Dr. Kimball, in speaking of the uncertainty regarding the results of ovarian operation, remarked that now and then cases, apparently the most promising for recovery, turn out badly. By way of illustration, he said that when last in London he called on Spencer Wells, and was shown a letter the latter had just received from Keith, of Edinburgh. Wells had seen Keith remove an ovarian tumor only a few days before. The case was, in every respect, as favorable for a successful result as could be desired. To the great surprise and disappointment of both gentlemen, this patient died in three days after the operation, but from what cause no one could tell. Then again, one sometimes has to deal with a case where the conditions are such as to contra-indicate an operation. Not long since, a patient was sent to Dr. Kimball from Canada, with a view to the removal of an ovarian tumor. Upon examining her case, he found difficulty in making a satisfactory diagnosis. The history of the case, as given by a highly-intelligent physician, taken in connection with the present feeble condition of the patient, led to the suspicion that the tumor in question might be malignant. He was, therefore, in doubt as to the expediency of interfering with it. Patient and friends, however, chose to take the risk, and he operated. On opening the abdomen, he found no ovarian tumor, but instead, a marked case of papillomatous cancer of the uterus, and so far advanced in the process of degeneration as to forbid any attempt to remove it. Contrary to expectation, the patient recovered from the operation, and in less than a month returned to her home in Canada, greatly relieved. He afterwards received a note from her, expressing her thanks for the great benefit she had received from the operation, saying also, that she was hopeful of still further improvement. Of course this case must ultimately prove fatal.

He mentioned another case of a patient he was called to see in Providence several years ago. She was suffering from an ovarian tumor, which, from its history, he thought might be malignant. He advised her to return to her home in Nova Scotia before she became too feeble to get there. She was greatly disappointed at his refusal to operate, and made him promise that if she improved in health, he would go to her home and operate whenever she saw fit to send for him. She held him to his promise, and three months later he went to Nova Scotia and removed from his patient a small-sized ovarian tumor, which proved to be of a decidedly malignant character. She recovered from the operation, and for a time seemed in a fair way of complete recovery, but he has since learned that she lived scarcely a year from the date of the operation.

Dr. J. W. Elliot had operated fifteen times with one death.

He thought that the technique of the operation was well settled and could easily be learned, but the important things in keeping the mortality low were cleanliness and good judgment. He did not believe it was possible for an operator to choose his cases so as to make a good record; for, the cases that seemed the most favorable often turn out the most difficult and *vice versa*. The only fatal case he had had seemed an easy one before the operation, and yet it turned out a very complicated double ovariotomy, one cyst being papillomatous and the other having a twisted pedicle. On the other hand, he had operated with a good result on a large suppurating cyst with a temperature of 103.° and a pulse of 120, where there was little hope of recovery. In this last case it became necessary to stitch the cyst to the abdominal wall and put in a drainage tube.

Dr. Elliot was decidedly in favor of early operations; the removal of a small simple cyst was attended with very little danger, but every day the cyst remains and grows it is liable to undergo changes which more than double the dangers of the operation; for instance, it may become malignant, the pedicle may become twisted, it may become inflamed and suppurate, it may rupture and cause peritonitis, it may become complicated with pregnancy, nephritis, thrombosis, or some accidental disease. Dermoid cysts are especially liable to become adherent or suppurate. Every ovarian tumor must some day come to operation. All things considered, Dr. Elliot thought it was best to operate as soon as the tumor is discovered.

Dr. Lyman said that statistics were now of comparatively little importance. Thirty years ago very few ovariotomies had been done and it was thought by many of the most distinguished surgeons that the operation should be condemned. But others thought it had a future before it, that it required more careful investigation, beginning with unbiassed statistical inquiry. After a year's careful research he published the statistics alluded to by the chairman. Only about 300 cases which could be *fairly authenticated* could be found in American or foreign literature. These, together, gave a mortality of only forty-two per cent., notwithstanding the inexperience of that day in abdominal surgery; not more than many operations which were considered to be perfectly legitimate, comparing favorably with such as strangulated hernia or amputation of the thigh. These results awakened a new interest and under the stimulus given by Spencer Wells and others, the cases in this country and England alone are now numbered by thousands, the mortality with some operators being not far from ten per cent., and the technique has become so nearly perfect that it seems as though any further improvement must be sought for in improved methods of diagnosis.

Dr. Farlow said that the statistics of ovariotomy would be more favorable if one fact were more commonly borne in mind, especially by general practitioners: that is, the harmfulness, in most cases, of tapping and the effect that it has on the formation of adhesions. This is, of course, well known to ovariotomists and gynæcologists, but among those who seldom see an ovarian tumor the idea seems to prevail that, because tapping is useful in ascites, all collections of fluid in the abdomen can be treated in the same way and with like benefit. If, on the contrary, it could be impressed on the general practitioner, that if there is a chance of the tumor's being ovarian, it should not be tapped but let alone and sent early to an ovariotomist for examination and advice, we should find the num-

ber of deaths after operation due to extensive adhesions much less than at present.

Dr. Reynolds referred to the duty of the general practitioner in cases of ovarian tumor. He considered it a serious matter for a general practitioner to say to a woman, you have an ovarian tumor and ought to be operated upon within four weeks. You have one chance in ten of dying. The patient is in a good condition, what shall she be told? How sure is it that delay is unwise when the tumor is evident?

Dr. Homans answered, that if a tumor had been growing slowly, and was increasing in size slowly, that one need not hurry in operating; one need not hurry in removing a parovarian cyst, that is, one of the broad ligament, but symptoms of a twisted pedicle, or rapid growth of a tumor, or distress, or rapid constitutional disturbances, ought to lead to *immediate* operation. Dyspeptic symptoms, diminution in the amount of urine, œdema or ascites require prompt but not immediate (that is, within a few hours) removal of the cyst, so also would any obstruction to the circulation from pressure. In regard to adhesions it is impossible to make an accurate diagnosis; posterior adhesions are rare, and these are the ones most to be dreaded. Again, if a woman is perfectly comfortable and has very young children to care for and is near her surgeon, she might wait, while a person who was going to a distance not to return for years could not.

Dr. Homans further said, given a case of ovarian tumor that is malignant with contents looking like vaseline, what is one going to do? The cyst cannot be tapped for the fluid will not flow. Should the woman be permitted to die as she is, or should the chances of an operation be taken to give her a few months' respite when the disease will recur and she will die? He does not see how one can tell what parts are invaded. He operated the other day on a double ovarian tumor and found malignant disease, which will recur. Another case was one of papilloma. The patient had been tapped thirteen times in eleven years, and the tumors were supposed to be fibroids, immovable and irremovable, and this verdict had been given in one of the largest cities; but at last he decided to operate. The tumors were papillomatous, and in operating the bladder was cut into requiring ten stitches. The woman has gained forty pounds in weight and is now well.

Dr. Reynolds asked if much importance was given to adhesions by ovariotomists.

Dr. Irish replied that, while the omental and parietal adhesions existing in a moderate degree did not greatly increase the dangers of ovariotomy, yet extensive visceral and especially pelvic adhesions had seemed to add very much to the risks of the operation. Among the 600 cases mentioned in his paper, were found seventy-five with extensive pelvic, or with pelvic and visceral adhesions. Of this number forty-two died. Hence, in this list, adhesions of the latter character had been followed by great fatality — greater than had attended the removal of degenerate cysts.

TUBO-OVARIAN CYST. HÆMORRHAGE INTO THE TUBE. OPERATION.

Dr. Elliot showed a tubo-ovarian cyst which he had removed by laparotomy on account of hæmorrhage into the tube.

The Fallopian tube was dilated, tortuous and elongated to the extent of nearly six inches. Its wall was in general at least one-eighth part of an inch thick and in places nearly twice as thick. The outer end was connected with a sacculated cyst as large as two fists. The cavity of the cyst and the canal of the tube communicated by an opening one-eighth of an inch in diameter. The cyst represented the ovary and was inflamed and injected. There was also a cyst of the broad ligament which was as large as two fists. There was then a chronic salpingitis, a tubo-ovarian cyst, acutely inflamed and a parovarian cyst, all in one specimen. Dr. Elliot had been called to see the patient by Dr. Worcester, of Waltham, on account of pelvic inflammation and hæmorrhage from the vagina. He had found a tumor in the pelvis reaching two inches above the pubes. Twenty-four hours later the tumor was as high as the umbilicus. The temperature was 101¼°. He thought it must either be an abscess or hæmorrhage into the tube, but in all probability the latter, and accordingly opened the abdomen. The tube and cyst were found greatly distended with blood and pus. The operation was exceedingly difficult. The patient recovered promptly.

AMERICAN OPHTHALMOLOGICAL SOCIETY.[1]

Dr. Mittendorf also described a case of

MELANO-SARCOMA OF THE CONJUNCTIVA AND CORNEA.

Mrs. M., aged forty-six, came under observation August 23, 1884. In April of that year, a black spot appeared upon the lower part of the conjunctiva and was removed. When she again came under observation two other tumors had appeared. They were about the size and shape of cucumber seeds. Two or three spots looking as though ink had been dropped on the eye-ball were also noted. The tumors were movable and the conjunctiva surrounding them slightly congested. Otherwise, the eye-ball was normal and vision almost perfect. The growths did not affect the left eye which was highly astigmatic. The patient was a strong, hearty woman with no appearances of cachexia. There had been no injury to the eye and the family history was good. The pre-aural glands and those of the neck were not enlarged. The tumors were removed and the wound in the conjunctiva brought together with sutures. Healing took place rapidly.

Four months later she returned with two growths starting from the lower portion and the outer canthus of the same eye. There was also a small flat growth on the cornea, not connected with the tumors. The tumors were again removed and the patient returned to her home.

In the spring of 1886, she again made her appearance with the eye closed. There was a small tumor the size of a cherry which had developed at the seat of the former growth. The tumor with a portion of the conjunctiva was removed. A pre-aural gland and some glands in the neck were found slightly enlarged. The general health remained good. She had, in fact, gained in weight since the previous operation.

Four or five weeks ago, she again returned with another growth. The eyelids could not be separated. An incision was made and the tumor removed.

Microscopical examination showed the growth to be a sarcoma with round cells. The melanotic appear-

[1] Concluded from page 140.

ance was chiefly due to hæmorrhage in the parenchyma. Pigment granules were also present.

DISCUSSION.

DR. H. D. NOYES, of New York. In a case of melanotic sarcoma on which I operated some years ago, the disease has not returned.

DR. H. KNAPP, of New York. I have seen a number of these cases on which I operated as carefully as possible, but they have all after a variable period, relapsed.

DR. O. F. WADSWORTH, of Boston. I know of two cases of episcleral epithelioma which did not recur for several years after removal.

THE USE OF HOT WATER IN SOME OF THE CORNEAL AND CONJUNCTIVAL INFLAMMATIONS,

by DR. B. E. FRYER, of Kansas City.

In this plan of treatment, the water is used at as high a temperature as can be borne. After a few hours a temperature of 140° can be borne. The water should not be of a lower temperature than this and as much higher as the patient can stand. A method of using it is by fomentation with a napkin dipped into the hot water, not wrung out, and applied to the closed eyelids. This is continued for half an hour at a time and repeated every one, two or three hours day and night. It may also be applied by suspending a vessel above the patient and allowing the water to escape through a tube, thus keeping up a continuous action of the hot water. In some cases the temperature may be raised almost to the boiling point. During the intervals between the applications a cloth wrung out of hot water is allowed to remain over the eyes. In some cases of purulent ophthalmia, the hot water may be thrown into the conjunctival sac.

In purulent conjunctivitis this application cuts short the attack more quickly and safely than the use of ice-cold water. In gonorrhœal ophthalmia, it quickly lessens the swelling and diminishes the occurrence of ulceration of the cornea. If ulceration has commenced, it is less likely to progress and the amount of cicatricial tissue is lessened. In these cases, I occasionally use instillations of sublimate solution of finely powdered iodoform. This plan of treatment is not so readily applied in ophthalmia neonatorum. In catarrhal conjunctivitis and phlyctænular ophthalmia, it is a good adjuvant. In acute and chronic keratitis it is useful. Its most marked effects are seen in corneal ulcer. The small amount of opaque tissue left is astonishing. The pain and photophobia are also diminished by the hot water.

DR. WILLIAM F. NORRIS, of Philadelphia. I have had good results from the use of hot water in gonorrhœal ophthalmia. It is a comfortable application and several apparently unfavorable cases have gotten well under its use.

DR. SAMUEL THEOBALD, of Baltimore. I have not used hot water in purulent troubles, but in interstitial keratitis and specific keratitis its use has been beneficial. I think that it favors absorption of the opacity of the cornea. Constitutional treatment and the use of atropia of course accompanied the applications of hot water.

ASTHENOPIA, AND THE CHANGES IN REFRACTION IN ADOLESCENT AND ADULT EYES,

by WILLIAM F. NORRIS, M.D., of Philadelphia.

The speaker first referred to the changes occurring in the shape of the eyeball at various periods of life. It is regarded by some as not necessary to correct slight errors of refraction, but the author considered their correction as of great importance when they produce asthenopia. By removing the trouble the congestion and softening of the eye is removed and the lengthening of its visual axis is prevented. This congestion and softening were regarded as important factors in the production of astigmatism and conical cornea.

A number of cases of diminishing hypermetropia and of hypermetropia passing into myopia were described. Diminishing hypermetropia and increasing myopia are simply different stages in a process essentially the same. They are both the result of softening of the eyeball and slow distension in the direction of the visual axis. Careful correction in these cases is one of the best means of preventing their further progress. The eyes should be carefully measured under the influence of a mydriatic. The enforced rest of the eye, thus obtained, is an important aid in diminishing the congestion. During the dilatation of the pupil, dark glasses should be used even in a mild light. All cases of hypermetropia where there is a decided difference in level between the disk and the macula should be carefully watched.

DISCUSSION.

DR. E. GRUENING, of New York. I have been much interested in one group of cases. The patient on arising has pain in the eyes with photophobia, passing off in an hour or two. He was not able to fix on any object for any length of time. There is also lachrymation. When I find such symptoms, I look into the nose and almost always find evidence of nasal disease. The nasal reflex plays an important part in our modern pathology. All the affections due to nasal irritation are increased by the recumbent position, for this favors congestion of the erectile tissue of the nose. It is not, probably, that eyes which have rested all night would manifest painful sensations, and this fact tends to exclude ordinary asthenopia in these cases. I have treated these patients by removing the nasal trouble, and in a series of 200 cases, 150 have been benefitted, while the remaining fifty have passed from observation.

The subject was further discussed by Drs. Theobald, Harland, Risley, and Randall.

(To be continued.)

ANNUAL MEETING OF THE AMERICAN NEUROLOGICAL ASSOCIATION.[1]

JULY 21, 22, 23, LONG BRANCH, N. J.

EXECUTIVE session was then called, and officers for the ensuing year elected as follows: *President*, Landon Carter Gray, Brooklyn, N. Y.; *Vice-President*, J. Van Bibber, Baltimore; *Secretary and Treasurer*, G. M. Hammond, New York; *Councillors*, B. Sachs, New York, Wharton Sinkler, Philadelphia.

A paper was read by DR. L. C. GRAY, on

LESION OF BOTH TEMPORAL LOBES, CAUSING ALMOST ABSOLUTE LOSS OF MEMORY OF EVENTS, WITHOUT WORD DEAFNESS, OR DEAFNESS.

Male, aged forty-three years, unmarried, with a

[1] Continued from page 142.

probable history of specific disease. Patient was admitted to the Hospital for Nervous and Mental Diseases, in the early part of June, remaining there until the latter part of the month, when he was removed to the Morris Plains Asylum, where he died in October. During the whole of this time careful observation failed to detect any other symptom than that of absolute loss of memory of events without word deafness or deafness.

At post-mortem there was found a lepto-meningitis of both the right and left temporal convolutions which meningitis also extended around the fissure of Sylvius, involving the gyrus marginalis, and the bases of the two ascending frontal and the ascending parietal. A number of letters of the patient were read which showed this peculiar loss of memory and his intellectual preservation in other respects.

JULY 21, AFTERNOON SESSION.

The PRESIDENT then called for discussion of Dr. Gray's paper.

DR. WILDER said that he had not quite understood the lesion Dr. Gray referred to in his paper. Dr. Gray replied that meningitis was the only lesion in the case.

DR. ZENNER, of Cincinnati, Ohio, asked to what extent the cortex was affected. Dr. Gray replied that both temporal lobes were softened and the layer of grey matter much less than any other portion of the brain. No microscopical examination was made.

Dr. Zenner asked if there was any confusion of speech. Dr. Gray answered he was told there was none at all, and he knew there was no evidence of it in his letter.

Dr. Zenner remarked he would not like to accept a case like this where softening was not detected, as refuting the ideas which have been generally accepted that the temporal convolutions were the receptacles of speech so to speak; for a meningitis does not necessarily rob the parts underneath of their function.

DR. GRAY stated that both temporal and sphenoidal convolutions were softened.

DR. ZENNER thought that could have occurred in the last few days of life. As regards the temporal convolutions being the seat of hearing he thought that had been less definitely established: that it was only one of the organs in physiology; and that there was nothing which he knew of in pathology which would establish the temporal convolutions as the seat of learning, but lesion of the temporal had been established to result in word deafness.

DR. V. P. GIBNEY, of New York, then read a paper on

PSEUDO-HYPERTROPHIC PARALYSIS,

illustrating the same with a case and presenting specimens from the spinal cord which had been secured at the post-mortem, and afterward prepared and mounted by Dr. Amidon.

The Doctor remarked that he did not propose to advance any startling or new theories, but he wished to put a case on record substantiating the appearances of those microscopic specimens presented by Dr. Amidon. Until recently he had been under the impression that the lesion of pseudo-hypertrophic paralysis was more frequently located in the spinal cord. He spoke of the lesions occurring in the spinal cord and those originating in the muscles themselves, and which of late have been the subject of much discussion.

The case, on which the paper was based, came under the author's care on April 10th, 1878, and was seen almost daily for one year, and since that time has reported occasionally; death resulting from catarrhal bronchitis on December 30, 1885. The patient was a male, eight years of age when he first came under Dr. Gibney's care; the loss of power dated from the second year of his life; no medical advice in particular was secured until he was six years of age, now some ten years ago. The father, mother and children, some four or five in number, have all some peculiarity of speech. Three children had died from tuberculous meningitis, so reported; one brother, two years younger than the subject of the history, is affected in the same manner and his case is progressing the same way.

DR. AMIDON then presented the specimens under the microscope mentioned by Dr. Gibney; he also exhibited some sections of a normal spinal cord showing the contrast between the healthy and diseased cord.

The PRESIDENT then called for the discussion upon the paper.

DR GIBNEY asked if there was any cord lesion in pseudo-hypertrophic muscular paralysis, whether the latter stages of this disease are distinctly clinical or whether they run one into the other.

DR. G. W. JACOBY, of New York, remarked, the last time he had the pleasure of demonstrating a case, and in seventeen cases recorded, there was no change in the anterior cord; but on the other hand there was in the muscular tissue a shortening of the fibres, an increase of connective tissue and an increase of fat. In some cases there was no reference made to the motor nerves in the muscles themselves.

In others where pieces of the muscular tissue had been removed and examined microscopically, atrophy of the terminal filaments of the motor nerves was found with other changes. I would ask Dr. Amidon whether he paid any attention to that.

DR. AMIDON replied that Dr. Gibney had sent him a portion of the dorsal muscles for that purpose, but he had not yet examined it.

DR. SACHS remarked that the subject of the paper was of practical interest at this time in neurology as we had had an era in which diseases of the brain were discussed mostly. Then there was an era of interest in the peripheral nerves. The doctor thought that in direct distinction to Charcot's school we must take into consideration what Ayers had done. He supposed that all knew that this condition was common in the young, but there was another form which was called juvenile muscular atrophy; juvenile atrophy would probably be classed as a motor and spinal cord affection. He thought there was one clinical point which would enable us to establish a differential diagnosis, and that would be in regard to the electrical reaction, if the affection is peripheral only, the electrical action might slightly diminish or increase, but where degenerative action has occurred the reactions are not altered.

DR. ZENNER remarked that we knew that a change in the muscular tissues produced by disease, will produce a change in the ganglionic cells. He thought that where the disease commenced in the muscles and nerves, there would be but slight change in the cord. Perhaps only in the size and no change otherwise in

the inter-cellular tissue: and it seemed as though the change there might be secondary and that the extensive disease in the periphery is primary. He thought however that where there is extensive disease in the anterior portion of the cord the disease would be primary, but that the slight change would be secondary.

Dr. Gibney remarked that it was true that peripheral lesions might cause central troubles probably travelling in along the nerve filaments, but there was no decided proof to that effect. In some cases there is a neuritis produced in animals where caustic has been used as also as in human beings where it has been used upon the scrotum or testicles. One of these cases that I have known of peripheral disease has been of a decided nature.

Dr. Massey, of Philadelphia, thought that if there was no life in the muscles the cells would be affected.

Dr. Zenner explained that he had in view at the time he spoke the idea of serious injuries, as for instance, the loss of an arm, after which atrophy had been found in the brain or cord.

Dr. Mills asked an opinion as to the difference between pseudo-hypertrophic paralysis and muscular atrophy: stating that one of the brains he exhibited in the morning was from a youth who presented these two diseases together. He was one of three brothers in all of whom these diseases were conjoined. Some portions of the muscles were removed and a published report appeared some years ago of the same by Dr. Curlin. The doctor's own convictions were that these two diseases were practically the same thing rather than original central affections.

Dr. Lloyd then stated that he had reported the case of a female in whom pseudo-hypertrophic paralysis and atrophy of the muscular tissues was combined, there was wasting of the calf muscles and also those of the forearms but there remained some faradic contractility; the loss of muscular power was so great she could hardly raise her head from the pillow. There are also marked changes in her joints, there being hardly any olecranon process left, and the patellæ being only one-third of their normal size.

Dr. Gray remarked that he had a case in his wards who had been some six or seven years in dying; he has grown enormously fat for the reason he has been kept quiet; he is helpless in his lower extremities and almost so in his upper ones, but he takes an enormous amount of food, and to look at him, one would suppose it to be a case of pseudo-hypertrophic muscular paralysis.

Dr. G. M. Hammond, of New York, remarked that the destruction which occurred in the cells should not necessarily produce destruction of the spinal cord or atrophy, but if the disease extended from the muscles up the nerves it might do so.

Dr. Amidon said that he thought they came under progressive muscular atrophy and therefore there would not be any caving-in — so to speak — of the spinal cord.

Dr. Hammond replied that a disease which commences in the spinal cord might be extensive enough to produce caving-in of the anterior horns whereas in the specimens shown the horns seemed to be in very good shape and the disease involves the cells.

Dr. Durkem, of Philadelphia, thought that point was well taken, for in some of his specimens there was absolutely no change in the contour of the horns. He considered that in this disease there was an atrophic condition of the cells more purely; there is not an active inflammation but simply a shrinkage and gradual disappearance of the cells.

Dr. Gibney in closing the discussion thought the absence of the cells and slight loss of contour sufficient to account for the great muscular changes. But upon this point he was not satisfied, as to whether the loss of function and tone would not of itself account for the disappearance of the cells and their shrinkage.

Dr. Sarah J. McNutt, of New York, read a paper upon

MULTIPLE TUMORS OF THE CEREBRUM, PROBABLY OF SPECIFIC ORIGIN, OCCURRING IN AN INFANT.

The history of the child was as follows: Female, one year of age; was a nursing baby and owing to the carelessness of the mother was frequently exposed unduly. Parents both addicted to drink but no specific history or phthisis could be discovered, they were apparently fairly healthy.

The child on being admitted to the ward had a temperature of 102½°, pulse 160, respiration 44: there was occasional twitching of the extremities, head rolling and thrown from side to side. In the lungs râles were distinct, also dulness in places with bronchial respiration. The temperature gradually rose in spite of all treatment and death occurred twelve hours after being admitted to the hospital.

The autopsy revealed in the lower lobe of the left lung a yellow caseous mass about the size of two peas, the liver also being affected in the same manner, varying from the size of a millet seed to a pea; in the spleen were found deposits of the same; the intestines being also ulcerated in several places. The brain large and soft, was much distended by dark venous blood, but no evidence of thrombosis appeared; the pia-mater was congested and in some of the fissures pus of a greenish and yellow character was discovered. Both Sylvian arteries were nodulated and apparently thickened. In the left ascending frontal convolution just beneath the surface, were two caseous nodules the size of marbles which shelled out as though encapsulated. Similar nodules were found in the parietal and occipital lobes. Under the microscope these nodules revealed an abundant cellular formation, interspersed with thickened bloodvessels and cheesy zones.

The writer of the paper thought that syphilitic lesions of the young are rarely diagnosed, and considered this to be a marked case of gummatous infiltration; concluding that in the treatment of these cases we must rely on mercury promptly exhibited, but that of all methods inunctions seemed to afford the best results, the gummata in children apparently belonging to the secondary instead of the tertiary stage.

Dr. Wilder asked what was the composition of the nodules.

Dr. McNutt replied they were vascular and filled with large round cells.

Dr. G. Belton Massey, of Philadelphia, read a paper on

THE CAUSE OF ELECTROTONUS AND THE NORMAL FORMULA OF POLAR REACTIONS,

which was discussed by Dr. Jacoby and Dr. Gray.

JULY 22. — SECOND DAY. — MORNING SESSION.

Dr. Jacoby read the

REPORT OF THE COMMITTEE ON ELECTRICAL DOSAGE.

"That special rules for the application of electricity did not exist. Individual differences between patients and diseases make this impossible."

"They advocate measures adopted at the National Medical Congress, 1886, as recognizing certain electrodes."

"Knowledge of the current strength is not sufficient to know."

Report accepted and recorded in the proceedings of the Association.

Dr. Gray believed some thought should be taken of the substance of which the electrodes were made, and also as to the coverings of them as it would make a great difference in calculations; again, with what the sponges are wetted would make a difference, the temperature of the water must be taken into consideration; his rule being to use water as hot as the patient can bear it. The question of a galvanometer should also be considered.

Dr. Mills replied there was nothing in the resolution which would disband the Committee.

Dr. Lloyd stated that he had felt a great deal of dissatisfaction in using electricity especially in electro-gynæcology, because he did not know what strength would produce certain effects; the area of surfaces making differences in the strength; the question to decide is how much current will produce catalytic action; for instance, if you want to promote absorption of an inflammatory deposit in pelvic cellulitis or in stricture of the urethra, etc.

Dr. Webber stated that as far as his experience went, an electrode, no matter of what it was composed, should be if possible square; he had discarded the use of oval ones. He thought the dosage of electricity an individual matter and that no committee could lay down laws for its administration.

Dr. Massey thought there should be a standard milliampere, but unfortunately we have not any milliamperes that are the same unless very expensive. He thought it desirable the Society should purchase a good meter for the use of instrument makers, to be left in New York City. He thought the Committee had devoted too much time to therapeutics, the points to be gained are the determination of milliamperes; for instance how many milliamperes are required to produce a contraction in a certain muscle. He had recently made some preliminary experiments in that direction with the cathodic closure and the anodic closure; he thought a certain number of observations on normal muscles were necessary to determine the number of milliamperes required to produce a contraction.

Dr. Jacoby, on behalf of the Committee, replied as follows: I feel that the fine idea of the Committee is lost to view. It was on dosage, not galvanometers, that it was formed. It would be a work of years and years and not the work of a committee of three men alone. Remarks as to the covering of electrodes did not enter into our consideration. Ohm's law covers that. If the resistance is increased, current strength must be increased. The reason that no particular galvanometer was recommended was because they did not care to recommend any particular instrument maker; all galvanometers have their objections; this must be left to individual choice. It would be a difficult matter to find a standard galvanometer, it would be difficult to find one remaining the same after a year. The best and most delicate he had ever used changed. They are subject to magnetic influences. As regards the amount of current strength required to effect a certain result; if the Committee were to inform the Association that a certain number of milliamperes would cure a certain disease, it would be only individual experience. As regards the question of electrical dosage, there again you will obtain a contraction with the danger of the same result. He did not think absolutely normal muscles would give you similar contractions. The recommendations of the Committee are a plea for accuracy, to use the milliampere as has been done; but when you do, describe the amount of current used, give the number of milliamperes and style of electrode used.

Dr. Amidon then showed a photograph sent by Dr. Correll, of Zurich, of a microcephalic girl who had three sisters also afflicted in the same manner, and who had since died. The parents were natural in appearance and enjoyed good health.

Dr. Wilder stated that he wished to retract what he had said yesterday in relation to the brain of the Chinaman: he had since had an opportunity of carefully examining the same, and thought it the most remarkable brain he had ever examined, although there was nothing to point to its Mongolian origin. It presented some remarkable features, and in a great many ways pointed to an ape ancestry.

NOTES ON THE BRAIN. AN ADDITIONAL CASE OF INDEPENDENCE OF THE PAR-OCCIPITAL FISSURE,

by Dr. B. G. Wilder.

The writer, in his recent paper on the par-occipital fissure stated that among forty-three reliable specimens and figures accessible to him, the par-occipital was continuous with the parietal in twenty-one, and independent in twenty-two.

The brain of a negro child at birth, lately prepared by him, had two fissures wholly independent on the right, and barely united by a shallow junction on the left side.

The ental correlative of the occipital fissure in an early fœtus — in a fœtus estimated to be about three months of age — as shown in the accompanying photograph. Opposite the occipital fissure there was a distinct ental ridge, so that the entire thickness of the wall was there folded. A similar ridge is figured by Tiedman but not named or described; by further observations he could not determine upon as to whether it disappears in the adult or persists as a more or less distinct elevation known as the bulbous cornu posterioris or eminentia splenalis. Even if transitory, it adds another to the list of total fissures, including the calcarine, hippocampal, collateral and Sylvian.

POINTS ILLUSTRATED BY THE TRANSECTION OF THE FŒTAL BRAIN.

Six points of morphological interest we note, most of them indicating that the thalami increase in width as development proceeds, so that in the adult human brain they form, or seem to form, part of the floor of the proiœtes or lateral ventricles, which is not the case in other mammals, excepting, perhaps, the primates.

Dr. Mills then presented the brain of a baboon and of a negro sent by Dr. Formad, of Philadelphia.

DR. LEONARD G. WEBER, of New York, read a paper on

SOME AFFECTIONS OF THE NERVOUS SYSTEM ASSOCIATED WITH TUBERCULOSIS.

DR. WEBER remarked that in phthisis there was a condition of the mind in which cheerfulness predominated, but there was one in which the most gloomy thoughts were indulged in, frequently ending in insanity, and it was of this latter that he wished to speak. He illustrated his remarks with clear but somewhat lengthy histories of two cases, describing at length the well-known symptoms involved; he thought that rest-hygiene, somewhat like Dr. Mitchell's plan, was the proper treatment, but in these cases the difficulty was to make them rest, as it would be an extremely difficult matter to confine such patients to bed. He thought that in those cases where mental aberration occurred it was desirable to examine the lungs, as often the mental symptoms appeared long before any positive diagnosis of phthisis could be made.

DR. GRAY remarked that these cases had puzzled him sometimes, so much so, that he had sent his patients to a specialist in auscultation for an examination of the lungs. A case was quoted by him in which the mental symptoms predominated, and a consultation was called as to what really was the trouble; the patient died. At the autopsy, signs of tuberculosis were discovered. He thought Dr. Weber had looked at the prognosis of these cases in a rather too despondent manner, as he knew of several cases which had recovered and enjoyed excellent health. As to treatment, he agreed with Dr. Weber; the point is to secure absolute restriction of all expenditure of energy, giving them the largest quantity of food they can take.

DR. WEBER replied he was glad to hear hygienic measures emphasized, and also the great point of diet discussed; that in Germany this was very fully realized, and he had himself, while visiting there, seen it carried out with excellent results.

DR. VAN BIBBER, of Baltimore, stated that he was in the habit of seeing a great many cases of melancholia, and that he made it a custom to always examine the lungs.

DR. PARSONS, of Sing Sing, N. Y., stated that he had had charge of a large number of cases of melancholia, and he had noticed the frequency with which phthisis was associated with it, and he had observed that frequently the disease of the lungs would run into the second, and even the third stage without objective symptoms.

AFTERNOON SESSION.

DR. WILDER exhibited a frog which he had decerebrized more than seven months ago. The wound healed perfectly, and the animal has enjoyed good health ever since; the operation was performed on December 9th, 1885. A minnow or piece of fish is given to him twice a week, but it requires two persons to feed him, as one has to open his mouth, and the other puts the food in, and here a curious phenomenon presents itself — that if a piece of the minnow's tail projects from his mouth, the frog, while making an effort to swallow the fish, will, with its fore-feet, endeavor to pull the fish out of its mouth. The movements of the frog also are self-induced, for after remaining in one position for some time, he will slightly change his position. If placed upon a convex surface, and this be slightly revolved, he will endeavor to balance himself. The writer sometimes, while carefully observing him, would notice that he would wink with only one eye, but, when irritated, he would wink both eyes. He also wondered whether the animal ever slept, as on the least jar, when apparently asleep, he would instantly open both eyes. (The frog was then fed before the meeting, and exhibited the phenomenon described). Dr. Wilder remarked that he would like to know if a frog, under these conditions, could be educated. Just before coming into the meeting, while removing the frog from his box, one of his hind legs was accidentally broken, but it does not appear to cause him any inconvenience, and apparently no pain is felt. This frog also can be laid upon its back, and will remain there without any aid of mesmerism. The question also occurred to him whether this frog was capable of procreating his species.

DR. GRAY asked if he had ever hypnotized that frog.

DR. WILDER replied he had not.

DR. MILLS thought it would not have that part of the brain to be hypnotized.

DR. SACHS stated that he was in Gault's Laboratory for some time, and saw frequent exhibitions of frogs, but nothing was removed; the parts were simply severed. He thought Dr. Wilder's method more thorough, and was surprised to see the frog live so long; he then asked Dr. Wilder if he had ever put a block of wood in front of the frog and then irritated it, to see if it would jump over it or avoid the obstacle.

DR. WILDER replied that he had not.

MR. JASTROW, of the Johns Hopkins University, stated that he had a series of frogs at one time. First, normal; second, the same as this one; third, the optic lobes were also removed; fourth had everything removed. He had found that the more you removed, the more readily would the frog remain upon its back.

DR. WILDER remarked that when the parts were severed subcutaneously, there might be a question whether union did not occur.

DR. ZENNER stated that, in the hands of some experimenters, there had never been reproduction in the cord, but he did not know how it was in the brain.

DR. GRAY suggested applying a little acetic acid to one of the frog's legs, to see if he would try to brush it away.

DR. WILDER replied that he had not neglected to do so, and with the usual result.

MR. JASTROW said he found a frog that had lost one leg; he applied a little acid to its body; first the animal tried to brush it off with his sound leg, and afterwards with the stump of the other.

(To be continued.)

— According to a recent writer in the *Nineteenth Century*, the average number of days of sickness of the better class of Englishmen in middle life are about four days per annum. According to statistics derived some years since from the records of the mutual benevolent societies, whose members are drawn from classes not well situated in a hygienic point of view, and who report themselves as "sick," when having only local injuries incapacitating them from use of the hands, the number of days of illness in the lower classes, among men of middle age, was six days per annum.

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LITHÆMIA.

THE term lithæmia is now applied to a morbid complexus in which there are various nervous symptoms (vertigo, certain obscure neuralgic pains, palpitations, cramps and muscular twitchings, lassitude and irritability of temper) associated with an excess of urates, and frequently of oxalates in the urine. In accordance with modern views of the metabolism of albuminoids, the liver has been supposed to be the principal source of uric acid production, as well as the seat of that "metabolic neurosis" which finds expression in lithæmia, oxaluria, and glycosuria. In short, there has been a partial return (with clearer notions, however,) to the old humoral pathology, which ascribed a whole series of disorders to peccant principles in the blood, and we are now taught, as a deduction from important experimental facts, that there is a gouty diathesis, which, in its grave form, is gout, in its mild form is lithæmia.

Public attention was called to the "nervous symptoms" of lithæmia by an article by Dr. Da Costa in the *American Journal of Medical Sciences* for October, 1881, and subsequent articles by Lyman in this JOURNAL,[1] by Bartholow in "Pepper's System of Medicine," by Dana in the *Medical Record*, have tended to confirm or qualify Da Costa's views. Da Costa and Lyman have laid much stress on vertigo as a symptom of lithæmia, and the disappearance of this symptom under careful dieting, with exercise and a suitable eliminative treatment. Bartholow includes under the symptoms of lithæmia, derangements of the digestive organs and liver, of the circulation and nervous system. The subjects of lithæmia have the symptomatology of gastro-intestinal catarrh, with headache, frontal and occipital, dizziness, tinnitus aurium, nervous irritability, and despondency; they are subject to neuralgic attacks, have aching in their limbs, and more or less burning in the palms and soles.[2] Bartholow explains these symptoms as due to "deficient oxidation" of urea in the liver. "When albuminoid matters are taken in excess of the power of the system to convert them, or when the supply of oxygen to the blood is deficient from any cause, urea is not formed, but uric acid, and urates are abundantly excreted by the kidneys;" this excess of urates constitutes lithæmia.

At a meeting of the Practitioners' Society of New York, December 4, 1885, there was an interesting discussion of a paper by Dr. C. L. Dana, on the "Relation of Lithæmia, Oxaluria, and Phosphaturia to Nervous Symptoms."[3] Dr. Dana took the ground that there is no such thing as a lithæmic or uric-acid diathesis. There are, however, morbid conditions of the nervous system which are associated with excessive acidity of the urine, and excess of uric acid in the urine. The morbid nervous symptoms in these cases are those of gastric neurasthenia, lighter forms of nervous irritation, great nervous irritability, vertigo, bad sleep, hypochondriasis, etc. The lithæmic state is one allied to gout and rheumatism, rather than identical with either. Besides the ordinary and recognized divisions of neuroses — motor and vaso-motor, trophic and secretory, sensory — Dr. Dana would make a fourth class, the *metabolic neuroses*, glycosuria and lithæmia being included under this head.

In the discussion which followed, Dr. W. H. Draper expressed the belief that the lithæmic state (which he was inclined to regard as a diathesis whose aggravated condition finds expression in gout, rheumatism, and diabetes), is often responsible for chronic catarrhal affections of the gastro-intestinal tract, and even of the respiratory tract. The nervous disturbances he attributed to vaso-motor derangements provoked by the poisoned condition of the blood. Dr. E. D. Hudson, Jr., had come to the conclusion that the majority of neurasthenic cases were of lithæmic origin, and that the liver was the organ especially at fault. It seemed to him evident that most of these cases occurred in persons of rheumatic or gouty diathesis, and he had observed the transition, in a patient, from acute and sub-acute rheumatism to lithæmic symptoms. Dr. G. B. Fowler was disposed to refer lithæmia and oxaluria to interference with digestion, and imperfect oxidation of albuminoids.

Dr. A. A. Smith stated that he had been led to regard deranged states of the alimentary canal, and especially of the liver as at the bottom of all symptoms included under the names lithæmia, phosphaturia, oxaluria. When he became actively engaged in practice he found that his teachers had paid too little respect to the liver. His own respect for it was constantly increasing. Even in malarial poisoning he would give a cholagogue, not before giving quinine, but in connection with it, in short, in most of the cases under consideration persistent treatment directed to the liver would effect a cure.

In this discussion there was a striking unanimity as to the value of a diet in lithæmia largely nitrogenous; the withdrawal of carbo-hydrates and saccharine foods; the use of alkaline remedies, and mild cholagogues, and the administration of nerve tonics such as strychnia.

[1] G. H. Lyman in Boston Medical and Surgical Journal, Dec. 13th, 1883.

[2] Bartholow in "Pepper's System of Medicine," Vol. II, p. 970.

[3] Medical Record, January 16, 1886.

The discussion at the meeting of the Association of American Physicians at Washington in June last [4] on the question, "Does the Present State of Knowledge justify a Clinical and Pathological Correlation of Rheumatism, Gout, Diabetes and Chronic Bright's Disease," was opened by Drs. James Tyson and W. H. Draper, and was participated in by Drs. J. T. Dana, Horatio Wood, A. L. Loomis, William Pepper, A. Jacobi, E. G. Janeway and others. This discussion was so recently reported that it is unnecessary to more than refer to it. Those interested will find there the present mental attitude toward this subject of some of the leading clinicians and pathologists in the United States.

The problem of how from retrograde food or tissue elements, uric acid may be generated in such excess as to poison the economy has of late occupied the earnest attention of physiological chemists, notably Schultzer, Nenki, Salkowski, Hoppe-Seyler and Latham. It may be that valuable results, with an important bearing on the therapeutics of the future have been attained. The metabolism is of an exceedingly complicated nature, with what success the formula has been worked out may be judged by the synopsis given below of Latham's valuable contribution in the London *Lancet* (Vol. 1, 1886):

In order to study the changes which take place in the tissues in rheumatism, gout and diabetes owing to abnormal metabolism, the first consideration is to determine as far as it may be possible the structure of the molecules of living tissues, and then what changes take place on the death of the molecule. Lieberkühn gives the formula of albumen as $C_{72}H_{112}N_{18}O_{22}S$, and from the decomposition of albumen may be obtained aspartic acid, glutamic acid, acids of the lactic acid series, ammonia, glycocine (glycocol or amido-acetic acid), leucine, tyrosine, and other amido-acids. It is well known that lactic acid and the amido-acids can be prepared from a particular series of cyanogen compounds, the cyanalcohols, of which the type is $C_nH_{2n}\begin{cases}OH\\CN\end{cases}$. These cyan alcohols are unstable bodies, and possess some of the properties of living tissue, namely, that of undergoing intramolecular change, and also that of condensation.

Further, the cyan alcohols can be formed from the amido-acids as leucine and tyrosine, which exist in the intestine, and which are also converted into urea in the liver. (In yellow atrophy of the liver, urea disappears from the urine and is replaced by leucine and tyrosine). In the normal condition the urea which is excreted by the kidneys, enters the circulation with the blood which issues from the liver.

Pflüger attributed the functional metabolism of protoplasm, by which energy is set free, to the conversion of unstable cyanogen compounds to less energetic, stable amines, of which Wöhler's conversion of ammonium cyanate into urea by heating is a type: ammonium cyanate, CNO NH_4 is a type of living protoplasm, urea $CO(NH_2)_2$ of dead protoplasm.

By combination of amido-acids with dehydration, molecules would be formed containing the group CNOH, characteristic of cyanalcohols, this group arising from the dehydration of the acid-group CO·OH and the amido-group NH_2. Since, further, this group CNOH possesses a marked tendency to condense — as CNOH, cyanic acid to $(CNOH)_3$ cyanuric acid — by combining different cyanalcohols with tyrosine, we might have a molecule

$$C_6H_3\begin{cases}OH\\SO_2OH\\CH\cdot CN\cdot(CH_2\cdot CNOH)_3\cdot(C_6H_4\cdot CNOH)_3\cdot(C_6H_6\cdot CNOH)_x(C_6H_4CNOH)_y(C_6H_{22}CNOH)_zOH\end{cases}$$ or

$$C_{72}H_{110}N_{18}O_{22}S$$

which differs by H_2 only from Lieberkühn's formula for albumen. When such a molecule, held together by a force vital or otherwise, is decomposed, the CNOH group would be broken up and among the decomposition products might be acids of the lactic acid series, ammonia, glycocine, leucine, tyrosine, creatine, creatinine, urea, and carbonic acid, the products depending upon the mode of decomposition.

In the case of rheumatism and gout, the morbid product is uric acid, and not as formerly supposed, lactic acid, which is present merely as a result of the decomposition spoken of. The uric acid is due to defective metabolism and is a condensation product of the amido-acid glycocine, with urea, a condensation which may be artificially carried out. The process is as follows: The glycocholic acid (a compound of glycocine and cholic acid) of the bile enters the intestine and after it has served its purpose in digestion, the glycosine is returned to the blood. This with other amido bodies as leucine and possibly tyrosine, the products of digestion of albuminous food, is carried by the portal vein to the liver, and there converted into urea. When, however, this metabolism of glycocine in the liver is interrupted, whilst leucine and tyrosine still undergo normal changes into urea, we have in the liver glycocine and urea, which by dehydration become hydantoin, and this being easily soluble, passes into the circulation. In confirmation of this we have the experiments of Schiffer, in which, after the administration of sarcosine (methyl glycocine), methyl hydantoin was found in the urine. The hydantoin reaches the kidneys and is there condensed with urea (or biuret, a condensed urea) into ammonium urate. If the kidneys are sound, unless in large excess it will be excreted as fast as formed, and there will be little if any overflow into the circulation; when the urine is alkaline it will appear as urate of ammonium, sodium, etc., if other acids are formed at the same time and eliminated by the kidneys, the uric acid will according to the amount give rise to gravel, renal or vesical calculi. But if the kidneys become weakened or overflow, a portion of the urate will pass on into the circulation, and meeting the soda of the blood will be converted into sodium urate, in which form, it is deposited about the gouty joints; and being toxic it will act upon some portion of the nervous system, causing irritability, gloom, cephalagia, vertigo, palpitations, etc.

If uric acid is the poison of rheumatism and gout, the treatment should aim to prevent its formation and to promote its elimination. If the formation can be prevented, the kidneys will in time accomplish the elimination. Since the formation of uric acid depends upon glycocine, by seizing and eliminating this we may accomplish the end. When benzoic acid is introduced into the system of a mammal, it appears in the urine as hippuric acid, which is a condensation product of benzoic acid and glycocine. We can conceive in this case that the benzoic acid may combine directly with the glycocine to form hippuric acid, $C_6H_5\cdot CO\cdot NH\ CH_2\cdot COOH$: or that the benzoic acid unites with the cyanalcohol $CH_2\cdot CNOH$, which is the antecedent of glycocine, forming living hippuric acid, C_6H_5 (C N OH) $CH_2\cdot COOH$. When instead of benzoic acid, salicylic acid is used, the result is similar, salicylurie acid being formed. When the function of the liver is so interfered with that there is imperfect metabolism of glucose in passing through the organ, we have glycosuria, in which we are sure to witness marked mitigation by a careful diet, and abstention from saccharine and starchy food. But in other cases the diet seems to have much less effect in controlling the symptoms. If in the decomposition of albumen before spoken of, the group $CH_2\begin{cases}OH\\CN\end{cases}$ should be detached and hydrated to glycollic acid $CH_2\begin{cases}OH\\COOH\end{cases}$, and only partially oxidized, there would be formed carbonic acid, water, and methyl aldehyde HCHO, which as in plants might condense to glucose.

Should the group $C_2H_4\begin{cases}OH\\CN\end{cases}$ be similarly hydrated to lactic acid, and partially oxidized, we should have aldehyde CH_3CHO, which by condensation would become paraldehyde $(CH_3CHO)_3$, a remedy recently introduced as a hypnotic, and hence the drowsiness which appears in some stages of diabetes.

And again, the group $C_3H_6\begin{cases}OH\\CN\end{cases}$ would yield similarly acetone $CO(CH_3)_2$, which appears in the urine toward the termination of the disease.

Researches such as these must still be regarded as mainly speculative, though interesting and suggestive, and doubtless giving unmistakable indications as to the direction in which chemical pathology is tending.

[4] Journal, June 30th, July 6th.

SYPHILIS IN COREA.

We have previously on more than one occasion quoted the Medical Reports of the Imperial Maritime Customs of China. Their object is to procure and disseminate information in regard to disease among foreigners and natives in China. The last number of the series contains a report from Dr. H. N. Allen, on the health of Seoul, the capital of Corea, which is exceedingly interesting as an account of a little-known nation, but is most striking in the prominent part which it attributes to syphilis in the native pathology. Dr. Allen does not so state but it is very evident from his account that practically no treatment is available for this disease except through foreigners, so that his report may serve to give us an idea of the natural history of a nation in which syphilis is not only allowed to run its course unchecked, either by governmental regulation or by medical treatment, but is fostered by the habits of the people.

The people are married early and plural marriage is the common rule. Concubinage is recognized and a class of "dancing girl" prostitutes is largely blamed for the spread of syphilitic affections and gonorrhœa. Chancroidal ulcers about the anus occurring in boys led to the discovery of unnatural practices which the report mentions but without details. "Gonorrhœa seems as inevitable as ague and does not alarm the patient. The people distinguish between the various veneral troubles and have separate names for gonorrhœa, syphilis, and the primary sore." The discharge and painful urination in gonorrhœa is all that they wish treatment for; the presence of gleet seems a matter of little concern to them. "Chancres in all stages" are frequently seen; chancroids more often. Constitutional syphilis is known as the Chinese disease, and is almost a constant factor which must be considered in making up nearly every diagnosis. It is known to be the cause of the frequent abortions and the children that survive have very often ugly notched teeth.

Leprosy is also abundant, occurring in all its forms. Many of the patients are beggars who are not well posted in their family history, but from the disconnected accounts it seems probable to Dr. Allen that the disease is often hereditary. Leprosy and syphilis are often co-existent and iodide of potassium and iron worked quite a change up to a certain point. This has given rise to a report that foreign medicines will cure leprosy and as a result victims come from distant provinces with large certificates bearing the stamp of the various governors through whose territory they have passed to the effect that the bearer is worthy, etc. The report makes mention of certain cases in which the frontal bone is carious and the nose eaten away. The diagnosis in these nose cases proved difficult and the question between syphilis and leprosy was left to treatment.

Eunuchs are very commonly met; they are intended for service at the palace, yet they usually have their own homes and women. A Eunuch's "compound" is known by its usually having only one gate, instead of the usual gate for men and another for women. This is said to be a necessary precaution for keeping the women in as they do not like their masters and are apt to run away. One case of gonorrhœa presented itself in the person of a eunuch. The operation of castration usually consists in ablation of the testes only, but in some cases all the appendages are said to be removed.

Malaria occurs in all its forms, tertian, quartan, and quotidian; double quartern and double quotidian; "in fact the patients seem so over-charged with the poison that they only come out of one paroxysm to go into another." Very naturally masked forms also occur as brow ague, when syphilis and malaria sometimes join forces and pains occur every other night, in which cases quinine and the iodide need to be united.

Appended to the report is a list of the out-patients treated during the first six months after the establishment of the hospital at Seoul. It bears evidence of being the work of a man more interested in his cases than in the compilation of statistics but its figures are very interesting. It shows a total of 7,234 cases: of these, chancre and syphilis count up 868, and other headings must contain many cases of the same nature, as nocturnal pains, 50; necrosis frontal bone, 6; iritis, 6; enlarged cervical glands, 176; ulcerated throat, 60; In addition there were chancroid, 200, gonorrhœa, 196, gleet, 47.

MEDICAL NOTES.

— Dr. George Sturge in a letter to the *British Medical Journal*, lamenting the inadequacy of the Hospital Sunday offerings to support the expenses of the London Hospitals, says that these institutions altogether expend the sum of £10,000 annually for alcoholic liquors, of which a large portion is consumed by the medical staff.

— During the past year, wild beasts and snakes were unusually destructive to human life in the Central Provinces of India, there having been an increase of 262 in the number of persons killed, as compared with the preceding year. Of wild beasts, tigers, of course, were the most destructive, their victims numbering 110, against 98 in 1884, while the number of tigers killed was only 221, against 260. The death from snake-bite last year amounted to 1,066, against 797 in 1884, while only 1,997 snakes were killed, as compared with 2,378 the previous year.

— At this season of the year the *Northwestern Lancet* opportunely calls attention to the value of watermelons as a diuretic, because at this time the fruit can be obtained at the greatest advantage. There is, however, a preparation called honey of watermelon whose diuretic action is most striking. A Russian physician has recently made experiments both with fresh juice and the syrup, and has been able to increase the daily flow of urine by three or four times. The treatment is well worth trying, not only in dropsies from various

causes but in gonorrhœa, cystitis, and other affections of the genito-urinary tract where it is desired to produce an abundant and bland urine. The peasants of Russia have long know this remedy and used it with good success in the classes of affections named.

— A contemporary quotes the following story from "Lockhart's Life of Scott": It happened at a small country town in the North of England that Scott suddenly required medical advice for one of his servants, and on inquiring if there was any doctor at the place, was told that there were two — one long established, and the other a new-comer. The latter gentleman, being luckily found at home, made his appearance — a grave, sagacious-looking personage, attired in black, with a shovel hat, in whom, to his utter astonishment, Sir Walter recognized a Scotch blacksmith, who had formerly practised with tolerable success as a veterinary operator in the neighborhood of Ashestiel. "How in all the world," exclaimed he, "can it be possible that this is John Lundie?" "In troth is it, your honor, just *a' that's for him.*" "Well, but let us hear; you were a *horse* doctor before; now it seems you are a man doctor; how do you get on?" "Ou, just extraordinar' weel; for your honor maun ken my practice is vera sure and orthodox. I depend entirely upon twa *simples.*" "And what may their names be? Perhaps it is a secret." "I'll tell your honor;" in a low tone, "my twa simples are just *laudamy* and *calamy!*" "Simples with a vengeance!" replied Scott. "But, John, do you never happen to *kill* any of your patients?" "Kill? Ou ay, may be sae! Whiles they die and whiles no; but it's the will of Providence. *Ony how, your honor, it wad be lang before it makes up for Flodden!*"

NEW YORK.

— From the books recording the financial transactions of the Croton Aqueduct Commissioners, which have just been officially examined by the Commissioners of Accounts, it appears that the total expenditures from October, 1883, to August, 1886, amounted to $5,174,574.

Miscellany.

OPERATION OF THE ACTS RELATIVE TO THE ADULTERATION OF FOOD AND DRUGS IN MASSACHUSETTS.

In a circular lately issued by the Massachusetts Board of Health, the following articles are specified as having been found by the chemists of the Board to be especially liable to adulteration:

Food. *Form of Adulteration.* Milk: addition of water or coloring matter, and abstraction of cream. Butter: substitution of foreign fats, and addition of coloring matter. Spices: addition of starch and other foreign powders. Especially true of pepper and mustard. Cream of Tartar: substitution of starch, gypsum, and other cheaper substances. Baking Powders: alum and other injurious ingredients. Baking powders have no legal standard other than that of freedom from harmful ingredients. Lard: presence of cheaper fats and oils. Olive Oil: substitution of cheaper oils. Jellies and Preserved Fruits: substitution of cheaper fruits, and addition of coloring matter. Vinegar: absence of the required amount of acetic acid, and addition of coloring matter. Honey: substitution of cane sugar, glucose, and other substances. Molasses: addition of glucose, presence of tin or other foreign substances. Sugar: glucose, poisonous coloring matter. Maple Sugar and Syrup: glucose. Confectionery: terra-alba, poisonous coloring matter, fusel oil, arsenical wrappers, etc. Coffee: mixture or substitution of various cheaper substances. Canned Fruits, Vegetables, and Meats: metallic poisons.

Drugs. *Form of Adulteration.* Opium and its preparations, especially powdered Opium and Tincture of Opium: deficiency in the required strength of morphia. Cinchona, Quinine, and its preparations, especially the Citrate of Iron and Quinine: deficiency in the required amount of quinine. Quinine Pills: deficiency in weight. Compound Spirits of Ether [Hoffmann's Anodyne]: absence of its most important ingredient, the ethereal oil, or substitution thereof. Spirits of Nitrous Ether [sweet spirits of nitre]: deficiency in ethyl nitrite. Salts of Bismuth: excess of arsenic. Tincture of Iodine: deficiency in iodine. Iodide of Potassium: excess of chloride, or other impurities. Bitartrate of Potassium: excess of lime or other impurities, and substitution of starch and other ingredients. Jalap: deficiency in required strength. Cochineal: loaded with heavy foreign powders. Essential Oils: adulteration with turpentine. Pharmacopœal Wines and Liquors: excess or deficiency in required strength of alcohol, and excess in solid residue, addition of water, alcohol, or sugar.

Since the enactment of the laws of 1882 and the succeeding years providing for the inspection of Food and Drugs by the State Board of Health, 175 complaints have been entered in the Courts, for the violation of such laws in forty or more cities and towns of this Commonwealth.

OBITUARY. DR. FRANK HASTINGS HAMILTON.

The eminent surgeon, Dr. Frank Hastings Hamilton, who has been in bad health for the past two years, died at his residence in 324 Street, on August 11th. During his last illness he was attended by Drs. Dammainville and Lansing, with Dr. Austin Flint as consultant.

Dr. Hamilton was born at Wilmington, Vermont, September 10th, 1813, and was graduated from the Medical Department of the University of Pennsylvania at the early age of twenty. After remaining for a short time at his home in Vermont, he commenced practice at Auburn, New York, where he soon won an enviable reputation as a surgeon. Five years after receiving his medical degree he was appointed Professor of Surgery in the Fairfield (New York) Medical School, and one year later he gave up this position to accept a similar one at the Geneva (New York) school. He remained at Geneva for nearly four years, and then went to Buffalo; where, together with the late Drs. Austin Flint and James P. White, he was instrumental in organizing the present medical department of the University of Buffalo. From 1846 to 1860 he remained Professor of Surgery, constantly adding to his laurels as a distinguished surgeon and teacher. In 1860 he accepted the professorship of surgery in the Long Island College Hospital, and removed to Brooklyn; but scarcely had he settled in his new home when the Civil War broke out, and he entered the army as surgeon of the 31st Regiment New York Volunteers. Between his entrance into the military service and 1863 he was successively promoted to the grades of Brigade Surgeon, Corps Surgeon, under Gen. Keyes, and Medical Inspector of the United States Army. After leaving the army he came to New York to reside, and was one of the founders of Bellevue Hospital Medical College; in which school he occupied the Chair of Surgery until 1875; when he resigned. He still retained his position as one of the surgeons to Bellevue

Hospital, however, and continued to hold surgical clinics, which were largely attended.

Not only as a practical surgeon and a teacher of surgery, but also as a writer, Dr. Hamilton attained the highest eminence. His standard work on "Fractures and Dislocations," has gone through seven editions, and has been translated into both French and German. Among his other widely-known works, in addition to a large number of valuable monographs, are "Prognosis in Fractures," "Treatise on Military Surgery," "New Views on Provisional Callus," and "Treatise on the Principles and Practise of Surgery." The latter (published originally in 1872) was the work in which he took the greatest pride, and he felt that the crowning labor of his industrious life was the completion of the third edition of the book, which was issued only a few weeks since. He was also highly distinguished as an inventor of surgical appliances, and one of the most useful of his achievements in this field was the introduction of gutta-percha for splints for application to irregular surfaces.

Almost immediately after President Garfield was shot, Dr. Hamilton was summoned to his bedside at the particular request of Mrs. Garfield, who was naturally anxious to secure the most eminent surgical talent in the country, and he went on to Washington by a special train; remaining almost constantly in attendance upon the wounded president until his death at Long Branch.

Dr. Hamilton was consulting surgeon to St. Elizabeth's Hospital and a large number of other medical institutions in New York, and at various times was President of the Medical Society of the State of New York, the New York Pathological Society, the Society of Medical Jurisprudence and State Medicine, and other scientific bodies.

Dr. Hamilton was twice married; his first wife, whom he married in 1834, being Miss Mary Virginia McMurran, of Virginia, and his second, whom he married in 1840, Miss Mary Hart, of Oswego, New York; the latter died about a year ago. Two children survive him, Col. T. B. Hamilton and Mary, wife of Daniel Davis, Esq. The funeral services were held at his residence in New York, August 14th, and the interment was at the Sleepy Hollow Cemetery at Tarrytown-on-the-Hudson.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 7, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	776	401	34.36	10.20	24.36	.84	5.16
Philadelphia	971,383	409	196	21.36	11.52	14.40	2.40	2.88
Brooklyn	690,000	330	168	37.20	12.09	24.80	.31	4.96
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	211	105	34.31	15.04	30.61	.47	3.29
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	188	100	33.92	6.89	26.50	—	1.06
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans,	238,000	120	46	20.75	11.62	10.79	—	.83
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	85	40	42.12	25.74	30.78	4.68	1.17
Pittsburgh	190,000	105	66	49.40	1.90	24.70	11.40	3.80
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	47	18	31.95	4.26	25.56	—	2.13
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	20	8	15.00	20.00	10.00	—	—
Charleston	60,145	41	25	34.16	4.88	26.84	—	—
Worcester	68,383	28	21	60.69	7.14	53.55	—	—
Lowell	64,051	35	19	45.76	11.44	37.18	—	5.72
Cambridge	59,960	30	18	56.61	6.66	46.62	—	6.66
Fall River	56,863	28	17	39.27	14.28	39.27	—	—
Lynn	45,861	23	11	21.75	4.35	17.40	—	
Lawrence	38,825	13	3	23.07	—	23.07	—	—
Springfield	37,577	15	6	39.96	6.66	33.33	—	—
New Bedford	33,393	14	5	14.28	28.56	14.28	—	—
Somerville	29,922	—	—	—	—	—	—	—
Salem	28,084	12	8	—	8.33	—	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	11	2	27.27	9.09	18.18	9.09	—
Taunton	23,674	14	8	50.00	—	50.00	—	—
Haverhill	21,795	6	1	33.33	33.33	33.33	—	—
Gloucester	21,713	10	9	—	10.00	—	—	—
Brockton	20,783	7	4	28.56	28.56	28.56	—	—
Newton	19,759	10	6	50.00	10.00	40.00	—	—
Malden	16,407	8	4	62.50	12.50	37.50	—	25.00
Fitchburg	15,375	7	4	28.56	—	28.56	—	—
Waltham	14,609	0	0	—	—	—	—	—
Newburyport	13,716	6	2	33.33	33.33	33.33	—	—
Northampton	12,896	5	1	20.00	40.00	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,604: under five years of age 1,322: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 887, consumption 294, lung diseases 109, diarrhœal diseases 645, diphtheria and croup 93, typhoid fever 51, whooping-cough 27, malarial fever 27, scarlet fever 21, measles 11, cerebro-spinal meningitis nine, puerperal fever three. From whooping-cough, New York 11, Brooklyn eight, Pittsburgh five, Boston, Charleston and Newton one each. From malarial fevers, New Orleans nine, Brooklyn six, New York four, Charleston two, Philadelphia, Nashville, Springfield and Northampton one each. From scarlet fever, Brooklyn seven, Pittsburgh five, New York four, Philadelphia three, Baltimore and Providence one each. From measles, New York eight, Brooklyn, Cambridge and Lynn, one each. From cerebro-spinal meningitis, New York five, Philadelphia three, Lowell one. From puerperal fever, New York, Brooklyn, and District of Columbia one each.

In the 22 cities and greater towns of Massachusetts, with a population of 958,050 (population of the State 1,941,465), the total death-rate for the week was 25.02 against 26.39 and 24.27 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending July 24th the death-rate was 20.2. Deaths reported 3,521: infants under one year of age 1,296; acute diseases of the respiratory organs (London) 163, diarrhœa 505, measles 86, whooping-cough 66, fever 36, scarlet fever 36, diphtheria 25.

The death-rates ranged from 7.8 in Wolverhampton to 24.6 in Birkenhead; Birmingham 18.1; Blackburn 21.4; Hull 14.2; Leeds 17.9; Leicester 24.3; Liverpool 20.6; London 21.6; Manchester 24.2; Nottingham 15.3; Sheffield 16.6.

In Edinburgh 16.8; Glasgow 23.6; Dublin 21.0.

For the week ending July 17th, in the Swiss towns, there were 41 deaths from consumption, lung diseases 22, whooping-cough five, typhoid fever four, small-pox two, diphtheria and croup one.

The death-rates were: at Zurich 11.5; Geneva 13.1; Basle 17.1; Berne 18.2.

The meteorological record for week ending August 7, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Aug. 7, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday, ... 1	29.822	69.9	75.7	65.3	95.0	72.0	88.0	85.0	N.W.	S.E.	S.W.	13	4	6	O.	F.	O.	—	—
Monday, .. 2	29.517	72.5	83.8	64.0	91.0	42.0	54.0	62.3	E.	N.	N.W.	6	16	16	O.	F.	C.	—	—
Tuesday, .. 3	29.677	69.4	76.1	56.2	60.0	60.0	74.0	64.7	W.	W.	W.	16	24	13	F.	O.	C.	—	—
Wednes... 4	29.919	69.0	77.2	57.1	64.0	39.0	47.0	50.0	N.W.	N.W.	N.W.	13	10	8	C.	F.	C.	—	—
Thursday, 5	30.011	67.6	77.6	57.0	60.0	32.0	90.0	60.7	N.W.	N.W.	W.	6	8	9	C.	C.	R.	—	—
Friday, ... 6	30.020	65.3	72.9	60.1	87.0	75.0	85.0	81.3	W.	S.E.	S.W.	5	6	3	O.	C.	C.	—	—
Saturday, . 7	30.024	61.7	67.0	56.3	92.0	90.0	94.0	92.0	N.W.	E.	N.E.	2	12	18	G.	O.	R.	17	0.96
Mean, the Week.	29.856	66.6	74.3	59.6				70.9											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 7, 1886, TO AUGUST 13, 1886.

WOLVESTON, WM. D., major and surgeon. Granted one month's leave of absence on or about August 15, 1886. S. O. 104, Division of the Atlantic, August 7, 1886.

BENTLEY, EDWIN, major and surgeon. Ordered from Department Texas to Department East.

APPEL, D. M., captain and assistant surgeon. Ordered from Department East to Department Texas. S. O. 179, A. G. O., August 4, 1886.

LORING, LEONARD Y., captain and assistant surgeon. Granted leave of absence for one month, on surgeon's certificate of disability, with permission to apply for an extension of two months. S. O. 59, Division of the Pacific, August 2, 1886.

ADAIR, GEO. W., captain and assistant surgeon. Ordered for duty as post-surgeon, Fort Brady, Michigan.

GANDY, CHAS. M., first lieutenant and assistant surgeon. Granted leave of absence for one month, with permission to apply for one month's extension. S. O. 103, Division of the Atlantic, August 6, 1886.

MERRILL, JAMES C., captain and assistant surgeon. Assigned to duty as post-surgeon at Fort Klamath, Oregon. S. O. 120, Department of Colorado, July 30, 1886.

BENHAM, ROBERT B., captain and assistant surgeon. Relieved from temporary duty at Fort Omaha, Neb, and ordered to Fort Bridger, Wyo. S. O. 97, Department of Platte, August 5, 1886.

RETIRED.

MURRAY, ROBERT, brigadier-general and surgeon-general, August 6, 1886.

APPOINTMENTS.

To be assistant surgeons with the rank of first lieutenant:

HARRIS, HENRY S. T., January 5, 1886.

WOOD, LEONARD, January 5, 1886.

BANISTER, WILLIAM B, January 26, 1886.

MASON, CHARLES F., May 5, 1886.

PROMOTIONS.

To be surgeon with the rank of major:

BARTHOLF, JOHN H., captain and assistant surgeon, January 4, 1886.

KIMBALL, JAMES P., captain and assistant surgeon, January 24, 1886.

(Mem. A. G. O., August 2, 1886.)

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE WEEK ENDING AUGUST 7, 1886.

HUTTON, W. H. H., surgeon. To proceed to Key West, Fla., for temporary duty, August 7, 1886.

BEVAN, A. D., assistant surgeon. Ordered to examination for promotion, August, 1886.

WILLIAMS, L. L., assistant surgeon. When relieved at Buffalo, New York, to proceed to Mobile, Ala., for temporary duty, August 2, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING AUGUST 14, 1886.

WALTON, THOMAS C., surgeon. To remain on present duty until September 1, 1887.

WHITE, C. H., passed assistant surgeon. To remain on present duty until August 21, 1887.

RUSH, C. W., passed assistant surgeon. Authorized to delay ten days, under orders to Sitka, Alaska.

LUMSDEN, G. P., passed assistant surgeon. Ordered to Hospital, Mare Island, Cal.

BALDWIN, L. B., passed assistant surgeon. Ordered to the United States Steamship "Ranger."

NEILSON, J. L., surgeon. Detached from the United States Steamship "Ranger," to proceed home and wait orders.

BOOKS AND PAMPHLETS RECEIVED.

The Pathology and Treatment of Dropsy. By James Barr, M.D., L.R.C.S., Edin., Physician to the Stanley Hospital, Liverpool; Medical Officer to H. M. Prison, Kirkdale. (Reprint.)

Meconeuropathia. By C. H. Hughes, M.D., St. Louis, Mo. (Reprint.)

Positive Medication. A Pamphlet on Alkatrits, Alkametric Granules, and Alkadermic Pellets. New Forms of Medication in which the Potent Isolated Principles of Drugs may be administered so as to produce more Certain and Precise Results than hitherto have been obtained from the usual Forms in which Medicines have been dispensed. Also upon Alkassayed Fluids, a Class of Superior Assayed Fluid Extracts, each being adjusted to a Uniform Standard of Strength. Detroit, Mich.: Frederick Stearns & Co.

The Value of the Knee Phenomenon in the Diagnosis of Diseases of the Nervous System. By Philip Zenner, A.M., M.D., Lecturer on Diseases of the Nervous System in the Medical College of Cincinnati, Ohio. Chicago: 1886. (Reprint.)

The Treatment of Uterine Flexions. By Virgil O. Hardon, M.D., Lecturer on Operative Gynæcology, Southern Medical College, Atlanta, Ga. (Reprint.)

Medical Education and Medical Licensure. An Address delivered before the Twenty-Third University Convocation at Albany, July 9, 1885. By William H. Watson, A.M., M.D., Regent of the University of the State of New York. Albany: Weed, Parsons & Co. 1886. (Reprint.)

A Code of Rules for the Prevention of Infectious and Contagious Diseases in Schools. Being a Series of Resolutions passed by the Medical Officers of Schools Association, January 7, 1885. Second Edition. London: J. & A. Churchill. 1886.

Woman's Medical College of the New York Infirmary. Eighteenth Annual Catalogue and Announcement, June, 1886. New York: G. P. Putnam's Sons. 1886.

Report of the Delegates from the Philadelphia County Medical Society to the Thirty-Seventh Annual Meeting of the American Medical Association; with the Resolutions of the Philadelphia County Medical Society in Relation Thereto. Philadelphia: Wm. F. Fell & Co. 1886.

Thirty-First Annual Report upon the Births, Marriages, and Deaths in the City of Providence: For the Year 1885. By Edwin M. Snow, M.D., City Registrar. Providence: Providence Press Company. 1886.

Original Articles.

THE RELATIONS OF THE INFERIOR THYROID ARTERY AND THE RECURRENT LARYNGEAL NERVE.

BY THOMAS DWIGHT, M.D.,
Parkman Professor of Anatomy at the Harvard Medical School.

TEXT-BOOKS of anatomy say little on this point, which, however, may be of much practical importance. Luschka, Quain, Holden, and Sappey teach that the nerve passes behind the artery. Other authorities give the same impression without distinctly asserting it. Cruveilhier is, I believe, the only one who teaches the contrary. Sappey's account is the most precise one: "In its course, the artery describes two curves: one with the concavity downward and forward, embracing the internal jugular, the common carotid, and the pneumogastric; the other with the concavity looking upward and backward, containing the recurrent nerve."

Having observed some time ago that the relation is not always the same, but that the nerve may be found before the artery, as well as behind it, I began a series of observations, with the help of my assistants, in the anatomical department. I had tabulated the results, and had decided to continue the observations for another year, when I found that this question had been broached in Germany, and as my series is larger than any yet given, I thought it best to publish it now.

The relative position of the nerve and artery may be of interest in œsophagotomy, but it is important chiefly in operations for removal of the whole or a part of the thyroid, and it is in this connection that German observers have studied the question. Wöfler [1] stated that the nerve always passes before a branch of the artery.

Kocher,[2] on the other hand, describes the artery as passing behind the nerve, coming forward on its inner side and hooking over it. Rotter [3] made some fifteen examinations, and found it in a third, as described by Kocher; in a third the artery passed before the nerve. The remainder were not easily classified, as the nerve ran among the branches of the artery. Dr. Streckeiser,[4] in an elaborate paper on the "Morphology of the Thyroid," reports the results of the examination of both sides of fifty-six bodies. He appears, however, to have had chiefly in mind the question whether or not the artery hooked round the nerve, and, if so, to what degree it surrounded it. It is not quite clear, therefore, in how many of his cases the artery passed before or behind the nerve. In thirty-one instances, ten right and twenty-one left, the vessel did not curve round the nerve; and in forty-one cases, nineteen right and twenty-one left, the *ramus perforans* (a branch of the upper division of the inferior thyroid) is the one that makes the curve. This shows that in seventy-two of one hundred and twelve cases, no loop was formed by the main artery. In the remaining forty cases, twenty-seven right and thirteen left, the loop was almost or quite complete. It is probable that the enlarged and more tortuous artery of a diseased gland would be more likely to inclose the nerve in its folds than when the parts are normal; and it must be noted that Streckeiser made his observations at Basle where goitre is very prevalent.

Had I been acquainted earlier with Kocher's views, I should have paid particular attention to this point; as it is, I have endeavored simply to determine whether the artery passed before or behind the nerve, and have disregarded the relations of small branches.

Of the fifty-two bodies examined on both sides, the arrangement was symmetrical in twenty-nine, and the two sides differed in twenty-three. Of the twenty-nine cases in which the sides were alike, the artery was before the nerve in twenty-one, and behind it in eight. Of the other twenty-three, the artery was behind the nerve on the right, and before it on the left in seventeen; the artery was before the nerve on the right, and behind it on the left in three; the artery was either absent, or so small that it did not reach the thyroid in three, two left and one right. On the opposite side of each of these three cases the artery was before the nerve.

In twenty-seven subjects, only one side of the body was examined. On the right, the artery was before the nerve seven times, and behind it six. On the left, the artery was before the nerve ten times, and behind it four.

Adding these observations together, we find that on the right the artery was before the nerve thirty-three times, and behind it thirty-one. On the left, the artery was before the nerve forty-nine times, and behind it fifteen. Three times the artery was absent or very small. It appears, therefore, that as far as we may decide from so small a series, it is an even chance whether the right artery or nerve is in front, and that, on the left, the chances are three to one that the nerve will be behind.

The practical deduction appears to be that when it is necessary to tie the artery near the gland, it should, if possible, be carefully isolated. If the base of an enlarged thyroid be transfixed and ligatured *en masse* it is evident that if the nerve should happen to pass before the artery it would be in danger of being included.

[1] Wiener Med. Wochenschrift, 1879.
[2] Archiv. für Klin. Chirurgie, Bd. 29, 1883.
[3] Archiv. für Klin. Chirurgie, Bd. 31, 1885.
[4] Virchow's Archiv., 1886.

AN EPIDEMIC OF MALARIA IN EASTERN MASSACHUSETTS.[1]

BY ZABDIEL B. ADAMS, M.D., OF FRAMINGHAM.

BETWEEN the years 1876 and 1879, for the purpose of increasing the water-supply in the city of Boston, three large dams were made upon the Sudbury river and one of its tributaries in the town of Framingham. The riparian owners afterwards brought suits against the city on the ground of injury to health. The writer, being summoned as an expert, gave testimony in court, that in his opinion before many years intermittent fever would probably appear in consequence of building these dams. A further study of the subject compels the somewhat humiliating confession that no unimpeachable evidence can be found upon which to base this testimony. It is true that in the summer of 1885, a decided epidemic of malarial fever occurred in South Framingham, and that since that time many cases have appeared in various parts of the town, but there is no clear evidence proving a relation of cause and effect between the creation of these reservoirs and the epidemic of fever.

Almost fifty years ago, Dr. Oliver Wendell Holmes wrote his Boylston Prize Dissertation on intermittent

[1] Read at the Annual Meeting of the Massachusetts Medical Society, June 9, 1886, and recommended for publication by the Society.

fever in New England. This comprised an abstract of all that could be found in the earlier writers regarding the subject, and also a host of observations and opinions gathered from competent physicians living in places where the malady had occurred, together with reports, bearing on the question, from many localities where the disease was unknown, or known only through vague and unsupported tradition.

Two deductions may be drawn from this paper. First, that, since the settlement of the country, intermittent fever, whether as an endemic or an epidemic disease, was almost unknown in Eastern Massachusetts; and second, that the testimony of the greater number of observers was to the effect that the disease is generated spontaneously in swampy situations, and is bred autochthonously in heat, moisture and vegetable decay.

The author in his introduction is at some pains to demonstrate with his inimitable felicity of style and force of diction, that here, in our own New England, are presented all those conditions of latitude, of climate, of rainfall, of summer-temperature, and of soil, supposed to contribute to, if not to cause, the existence of malaria in the pestilential districts of Europe, but leaves "aside all discussion of the more subtle questions which naturally arise."

Dr. Holmes gives a map on which he notes a few places east of the Connecticut river where intermittent fever was believed to have arisen. In most instances the evidence appears hardly sufficient to prove indigenous origin. In the town of Hopkinton, Mass., it seems that in the last century some cases occurred in the vicinity of two ponds; and reference is now made to this fact as a matter of curious interest in connection with the epidemic in Framingham. It is well known that the neighborhood of Providence, R. I., has been repeatedly visited by malaria. Now the Blackstone river, which makes its way to the sea by Pawtucket and Providence, has a source in one of these infected ponds, while the river Sudbury, which flows through Framingham, arises from the other pond, the smaller feeders of the two streams flowing in adjoining meadows.

Another very valuable contribution to this subject is the able and thorough paper published in the Massachusett State Board of Health Report for 1880, written by Dr. J. F. Alleyne Adams, of Pittsfield.

In 1877, '79 and '80, it appears that there were twenty cases of intermittent fever in eastern Massachusetts, eleven of which were in Worcester County, five of them, the largest number in any one town, being in Hardwick, the extreme western boundary of that county. In Middlesex there were four, one in Ayer, one in Woburn, one in Billerica, and one in Wakefield. Three cases are reported from Taunton, in Bristol County, in 1879. None other are known to have occurred since 1836.

But this paper of Dr. Adams is especially interesting, as showing how views had changed with regard to etiology of the disease. Several observers remark the fact that it occurred independently of heat and marsh miasm. In most instances, some reference is made to the acknowledged agency of dams and swamps in its production, while clearly intimating that some other more important factor remains to be discovered.

Within the period covered by these papers, there have been three distinct epidemics of intermittent fever in New England — the first at the close of the last century, the second in 1836–37, and the third in 1879–80. The intervals have varied somewhat, but may be roughly said to be about forty years. In the second outbreak it appeared in places not attacked before, and in the third, again it advanced to new localities. There were, besides, a few places where it was seen in the intervals of these epidemics.

During one space of forty years, we have no record of intermittent fever anywhere in the State of Massachusetts, and for fifteen years, if we except south-west Connecticut, it was not seen in New England.

Dr. William H. Thayer, in a paper on "Malarial Fever on Long Island," (*N. Y. Med. Jour.*, March 7, 1885), says: "Its northern boundary in North America, as an endemic, is apparently regulated by two causes, more or less combined: the character of the soil and the mean temperature." "Eastward of the Alleghany Mountains its northern boundary, as an endemic, coincides with the isothermal line of 70° F. of mean summer temperature, which, beginning about Sag Harbor, L. I., runs west-northwest to the Hudson River about West Point, thence north as far as Watervliet Arsenal, thence south-westerly through Carlisle, Pa." "This places the greater part of Long Island, Westchester County, and the valley of the Hudson as far north as Watervliet, within the boundaries of the endemic, which will be shown to agree with the record."

Outside of these limits, described by Dr. Thayer, is a sort of debatable land, where malaria occasionally appears as an epidemic. Within this latter area, along the Connecticut River, in the valleys of Berkshire and Franklin, and about Long Island Sound and its bays, perhaps as far as Providence, R. I., there are localities where the favorable conditions of soil-moisture and summer temperature combine to make it almost endemic.

Some fifteen years ago, intermittent fever seems to have set out on a hostile march through New England. Beginning in south-western Connecticut, it has moved forward slowly year by year, generally in a north-easterly direction. Its course has been somewhat erratic, usually following up the streams, often doubling upon its track, making wide skips of twenty or twenty-five miles, and then going back again. The column has usually been preceded by a small skirmish line, the main advance not being made until the next year or the year after.[2] In some instances it has first appeared upon high ground, and remote from marshy or wet lands.[3]

Framingham occupies nearly the geographical centre of eastern Massachusetts, and is about 30 miles from Providence, 70 from the Connecticut River, and 100 from New Haven, these being, it is believed, the nearest points where malaria may be said to exist in a quasi-endemic form. The town of Thompson, in north-east Connecticut, is perhaps, topographically, the nearest of any where it has appeared, that in 1881, the nearest as regards time, as well as distance, being Providence, R. I., where it prevailed in 1883–84.

South Framingham is on the Boston and Albany Railroad, and is the point of junction of several important railway lines. The village covers about 600 acres on both sides of the railroad, and contains 4,200 inhabitants, 750 families occupying 500 houses. It is a

[2] This is said to be the case in some of the towns invaded in the State of Connecticut, and in Massachusetts also. Dr. R. W. Griswold, Report of the State Board of Health of Connecticut, 1885. South Framingham seems to furnish an exception to this rule.

[3] This was the case at Rocky Hill, Meriden, and East Lyme, Conn., and in some of the towns in this State.

manufacturing place, and growing rapidly. It lies between the Sudbury River basin and that of Lake Cochituate.

The soil of South Framingham is a sandy loam of little elevation, resting upon an extensive bed of quicksand, which underlies all the adjacent country, and is of varying depth and indefinite extent. This quicksand everywhere contains water, so far as known.

On the south and east of the village lies a wide, swampy region of some 3,000 acres in extent, called Guinea Meadows, constituting the water shed of Beaverdam Brook, a stagnant, obstructed stream which empties into Lake Cochituate. These swamps, which are partly wooded, are composed of a retentive peat, spongy, and in some places, of great depth. Into this bog the sewage of the village filters, or is led by means of ditches and drains. In spite of these unwholesome surroundings, the place is not unhealthy.

The part of South Framingham where the chief force of the epidemic of intermittent fever was felt in the summer of 1885, lies south of the Boston and Albany Railroad.[4] It differs somewhat from the rest of the village in three respects: *First*, it is contiguous to, and partly built upon, the Guinea Meadows. *Second*, it is traversed and bounded on one side by a deep, stagnant ditch, which comes especially under suspicion. This was made by the city of Boston in 1872, in order to connect the Sudbury River with Lake Cochituate by way of Farm Pond and Beaver-dam Brook. It has, however, for many years been abandoned and shut off completely from the pond. It has become stagnant, or nearly so, and its wooden sides have rotted and fallen in. A good deal of drainage runs into it. *Third*, when the wind is north-west, which was frequently the case during the epidemic, it comes directly from an area of about forty acres in Farm Pond, which has been isolated, become stagnant, and is covered with a rank, coarse vegetation.

The district infected contains, roughly, one-third of the area and one-fifth of the population of the main village. It covers about two hundred acres, half of which, perhaps, is swamp and not habitable. Five-sevenths of the houses in this region were attacked, and in some cases, every person in the house.

Among the supposed contributory causes which have existed for a long time in this locality and in various parts of Framingham without the appearance of intermittents, may be mentioned: a high summer temperature, hot days and cool, damp nights, with the peculiar effluvium of swamps and decaying vegetation; dry seasons and low wells; spring freshets choking up the drains of meadows with silt, and leaving stagnant pools "festering and evaporating in a summer's sun;" the digging up of the soil, making new streets, etc.; and the rank growth of vegetation in swamps and hollows. All these things have existed in perfection for an indefinite time in various parts of Framingham during the hot weather.

The connection of malaria with *dams* and artificial reservoirs, especially upon sluggish streams having banks of little elevation, and where wooded swamps are flowed, causing foul exhalations and effluvium when the water is low, is too much insisted upon by observers to be hastily denied. In the thirty towns of Massachusetts visited by epidemics of this disease in the past and present century, there are very few where this condition does not exist. Further, it is an admitted fact that in other countries and in this, and especially in New England and in our own State, that the removal of dams and draining off of reservoirs has coincided with, and is believed to have been a cause of, the disappearance of the pest.

As already said, in 1876–77 the city of Boston, having decided to take the Sudbury River for an additional water-supply, began the erection of three large dams within the town of Framingham.

The Sudbury rises in Hopkinton and Westborough. It is a slow stream, having little fall, and wide margins of meadow and swamp, often wooded. It winds through the town of Framingham from the south-western corner to the northeastern. Stony Brook, a large tributary upon which was placed a high dam, is a quick stream, but is, or was, bordered with wide areas of peat bogs and woods.

The watershed of these streams is largely composed of land which has been, for more than a century perhaps, used for farms and plentifully treated with barnyard manure. The water of both streams has always had a yellow tinge and pondy taste.

In making these dams the streams were turned aside, their beds exposed and deep excavations made, in some places of thirty feet. Great quantities of alluvium and peat were removed in this work, as was also the case in laying the main conduit to Chestnut Hill, which, as it quits Farm Pond, passes directly through the now infected area of South Framingham and crosses the Guinea Meadows. The workmen, numbering many hundreds, lived in barracks or shanties built upon the low ground near the bed of the streams, or in the woods and swamps; and most of the work was done in summer, the water being then at the lowest. They lived in the constant association of meadow-mud and fog, drank the water of the streams and worked in summer heat, and yet not a single case of intermittent fever appeared among them nor in the town anywhere. In 1877–78 the bottom of reservoir No. 1 was dug up from end to end for the purpose of laying a 48-inch connecting pipe.

During 1878–79, the dams being completed, the basins were filled and connection was made with Farm Pond, a natural body of water of no great depth which was utilized as a settling basin. In this manner about 850 acres were occupied by these reservoirs, representing a surface about one-eighth as large as the whole acreage of that portion of the town which from its elevation might presumably receive malarial infection from this source.

At various times since the filling of the reservoirs the water has been drawn off and the bottom exposed, and remained in that condition for months. Hundreds of acres of "drowned lands," covered with black mud and rotting stumps of trees and sending forth a horrible stench, have thus been laid open to the sun. The mud has been removed and placed upon the banks, or used to fill up the dead ends and shallows.

Farm Pond was drawn down in 1881 seven feet, and a temporary channel made around its shores, and in this work great quantities of the muddy bottom were removed.

The smell of sulphuretted hydrogen was, in summer, always perceptible in the sluice-ways and gate-houses at the dams.

In the summer of 1879 the water in the largest basin (No. 3, on Stony Brook) became offensive.

[4] Cases occurred in various parts of the town remote from this region.

This was found to be due to the growth and decay of certain minute algæ, described as follows by Mr. A. Fteley, the resident engineer, in his superb report on "Additional Water-Supply, City of Boston, 1882."

"These minute plants, which appear to be uniformly distributed throughout the water, flow with it, and are of such small bulk that they cannot be separated by screens; the wind has a noticeable effect upon them, and often blows them toward the lee shore, where they accumulate and form a solid scum of a sharp green color. When in the fresh state they emit a very peculiar musty odor: if stranded by the action of the wind they soon decay and form a bluish-green mass, and develop a smell as of organic matter in the process of decomposition. When in the water the algæ remain suspended for some time, and after a while sink to the bottom. Of the formation of the algæ, or of their origin, little is known; but it is remarkable that they appear very suddenly in large quantities, . . . equally distributed through hundreds of millions of gallons of water, twenty feet deep, several hundred feet from any shore, and in very calm weather, . . . increasing or diminishing with wonderful rapidity."

It remains only to add to this admirable description that the sudden disappearance of these organisms was as unaccountable as their appearance, and that the peculiar fœtid effluvium which was caused by them was distinguishable at a long distance from the reservoirs.

In the fall of 1881, the fishy or "cucumber" taste, which has occasionally developed in the Cochituate water-supply, was found in the water of Farm Pond. Professor Ira Remsen, of Baltimore (see his report on the impurity of the water-supply, City Document, No. 143, 1881), attributed the objectionable taste to the presence of a "species of fresh-water sponge, which was found in small quantities on the gravelly or stony parts of the bottom of the pond." "After a short time the bad taste in the water disappeared."

At this time there was an offensive and peculiar odor in the neighborhood of the pond.

The object of these details is to show that at various times during a period of eight or nine years previous to 1885, all those conditions which, in connection with the building of dams and formation of artificial reservoirs, are cited as being *contributory* causes at least of malaria, had been in operation in Framingham without producing intermittent fever.

It is only necessary to say further that the point where the epidemic of 1885 raged with greatest intensity is more than a mile from the nearest basin, and a mile and a half from any of the dams. No cases in fact occurred about the dams, and very few in the neighborhood of the reservoirs. It is true Farm Pond lies contiguous to the locality; but this is a natural body of water, although receiving that of the basins above.

The history of the epidemic requires but few words. It is hardly necessary to say that intermittent fever, at least in its epidemic form, can scarcely be mistaken for any other disease. A few scattered cases were seen in June and July. The latter month was hot and unusually dry. At the close of July there was a change of weather and a heavy fall of rain. This was immediately followed by the appearance of many cases. August was cold, colder than for fifteen years, and the amount of rainfall was very great (more than seven inches), much greater than had occurred for a long series of years, August being generally hot and rather dry. Between the end of July and the latter part of September, when the disease began to decline, more than 200 cases were seen and reported by the various physicians of the town. Others are believed to have occurred which were not seen and not reported.

As usual the type of the disease was tertian, rarely quotidian, more rarely still quartan. In many cases there was but one severe chill. People of all ages were attacked. There was generally a day or two of malaise or headache before the seizure. Vomiting was a frequent occurrence. The chill lasted one, two or more hours; the fever was intense, and was followed by profuse sweating, which continued in many cases far into the night. On the following day the patient was found completely recovered, or complaining only of weakness. There was one death, a feeble woman and very old, who refused all treatment. An Italian, one of the workmen upon the new conduit in Farm Pond, was sent to some State Institutton, where he is reported to have died from the fever. During the epidemic two cases of severe typhoid fever were seen by the writer in consultation in South Framingham.

Quinine was given in most of the cases, and with the usual success. Recurrent attacks, prolonged anæmia, enlarged spleens, and the other sequelæ were observed; but by far the greater number of patients recovered completely after a longer or shorter time.

As to the mode of introduction, the avenue by which malaria enters any locality, little can be said that is not more or less conjectural. The vehicle is probably water; but whether it descends in the form of rain or dew, or rises from the ground, or is drawn from springs or wells, we have no positive evidence to decide. It was remarked in the present instance that a large number of cases developed on the days succeeding two quite copious falls of rain. If this is the method of entrance, it may explain the apparent anomaly of the first appearance of malaria upon ground where no standing-water is seen.

But the source of the water which flows in the subsoil, or in the crevices of the strata of rocks, is something of which we know very little. "Barometric springs," as they are called, are found in New England, which in dry seasons suddenly burst forth, it is said, and flow in full volume many hours before the actual appearance of rain in their vicinity. Whence comes the vast body of water in the extensive wet quicksands underlying some parts of the county of Middlesex? It is believed by many that this water has a flow. Competent authorities maintain that malaria enters the body in the drinking-water. If this is the case, a distant source of the springs that feed the wells may explain the appearance of malaria in a spot where neither of the so-called factors, namely, heat, soil-moisture and vegetable decay, can be shown to exist.

(To be continued.)

— In May, 1883, obligatory vaccination was abolished in Zurich. In 1882 there were no deaths from small-pox. In the first three-quarters of 1883 none. In the fourth quarter the deaths from small-pox were eight in a 1,000 of total deaths. In 1884 in a thousand deaths there were from small-pox, the first quarter, nine, second, none, third, none, the fourth two and one-half. In 1885 in the first quarter six, second, fourteen, third, fourteen, fourth, thirty-eight. In 1886, first quarter, eighty-five.

REPORT ON PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

TREPHINING IN CASES OF HÆMORRHAGE FROM THE MIDDLE MENINGEAL ARTERY, WHERE THE SKULL OR SOFT PARTS ARE UNINJURED.

In the past three years, Krönlein [1] has opened the cranial cavity for hæmorrhage from the middle meningeal artery and resulting hæmatoma in four cases where neither wound of the skin, nor fracture of the skull existed.

The diagnosis was correctly made in every case. In each instance there was found a marked supra-dural extravasation in the region of the arteria meningea media. Two patients recovered. Cerebral hæmatoma may be (a) diffuse, or (b) circumscribed. Of the latter (b), Krönlein makes the following classification, according to the seat of hæmorrhage:

First. Hæmatoma media, or tempero-parietale, of the middle cerebral fossa (a region supplied by the trunk and anterior or posterior division of the arteria meningia media) due to hæmorrhage from the anterior branch of the anterior division.

Second. Hæmatoma posterius, or parieto-occipitale — parietal eminence — due to hæmorrhage from rupture of the posterior branch.

Third. Hæmatoma anterius, or fronto-parietale — frontal eminence.

The tempero-parietal region is the most common seat of injury (a) from the vulnerability of the region, (b) from the size and number of vessels, it being the seat of the trunk and the main branches. All hæmatoma are accessible at the anterior inferior angle of the parietal bone, with the exception of the circumscribed ones of the parieto-occipital region. If the hæmatoma is not found here, the parieto-occipital region must be explored, and the point for trephining is under the parietal eminence. Krönlein's indications for surgical interference are symptoms of cerebral compression, and his rule for locating the points for operation are as follows:

(1) A line called the horizontal line of the skull, namely, one passing from the infra-orbital border to the external auditory meatus.

(2) A horizontal line parallel with the above, and projected backward from the supra-orbital ridge. Both points of operation are in this line.

(a) The anterior; three to four cm. posterior to the zygomatic (ext. angular) process of the frontal bone.

(b) The posterior; at the point of intersection of the above horizontal lines, and one projected vertically, from a point just posterior to the mastoid process.

Krönlein claims that a double operation is indicated not only in cases where a single perforation fails to find the seat of extravasation, but also in cases of diffuse hæmatoma, since the clot can be more completely removed, and also a better opportunity afforded for drainage, should such be necessary.

CONTROLLING BLEEDING DURING EXCISION OF THE TONGUE.

Mr. Jordan Lloyd [2] describes a method of controlling bleeding from the tongue during partial or complete excision. The patient is placed under ether, a gag adjusted, the left index finger is carried well to the bottom of the glosso-epiglottidean pouch, defining clearly the hyoid bone with its cornua, the front of the epiglottis, and the back of the root of the tongue. A stout, long, well-curved, mounted needle, threaded with medium-sized whipcord, is entered from the front of the neck, in the middle line, immediately above the hyoid bone; one feels for the point of the needle with the left finger, as the instrument is pushed through the root of the tongue. In this way, the epiglottis is protected from injury, and nothing more than the lingual tissues are transfixed, then hook up the loop of thread with the left finger, and pull it well through and out of the mouth. Withdraw the needle, liberate the thread from it, and cut through the loop. Now enter the empty needle at the same point of puncture, through the skin only, and pass it subcutaneously to the right, until its point is opposite the upper border of the root of the great cornu. Care must be taken to keep just under the skin, and so avoid the lingual artery. Now turn the point inwards above the great cornu, so as to enter the bottom of the side of the pouch, and feel for the point of the needle with the finger. Thread one of the ends of the cord, which is in the mouth, through the needle, and withdraw. This casts a loop around the right half of the tongue. The left half may be dealt with in a similar manner.

TREATMENT OF AORTIC ANEURISMS BY THE INSERTION OF WIRE.

Ransohoff [3] reports a case treated by the introduction of ninety-six inches of silver wire into a sacculated aneurism of the ascending aorta; the result was temporary improvement, followed by death in a month from the time of operation. There have been fourteen cases reported in which this method of treatment has been applied, all terminating fatally, except in Stimson's case, where the result was negative.

Dr. Ransohoff thinks that there are ample reasons for repeating the operation in suitable cases. In the first place, death has in no instance ensued during the operation, although the possibility of such an occurrence is conceded. In four cases, death followed on or before the fifth day after the operation, so that in only thirty per cent. of the cases can death be attributed to the operation itself, while in the remainder it is in no way dependent upon it. The post-mortem reports show that coagulation almost invariably took place in the sac; the clot was found laminated and often adherent to the sac wall. Life was sustained for periods varying from three weeks to as many months from the date of operation. It should never be resorted to in aneurisms of peripheral vessels when so many safer methods are at command; nor is it admissible in internal aneurisms until all ordinary therapeutic measures have been fairly tried. Practically, as a last resort in such cases, it has undoubtedly lengthened life, and it is far from improbable that, if often adopted, a permanent recovery will occasionally be obtained in cases that are hopeless without it. The subject of the treatment of aneurisms by the introduction of filiform material was discussed at the Royal Medico-Chirurgical Society.[4] The general opinion seemed to be that such a measure must be regarded as a last resort. Mr. Holmes was in favor of the employment of a less rigid material than wire, instancing catgut and horse-hair, of which he thought the latter the better.

[1] Deutsche Zeitschrift für Chir., 1886, xxiii, Heft 3-4.
[2] London Medical Record, May 15, 1886, p. 202.
[3] Medical News, May 29, 1886, p. 597.
[4] British Medical Journal, February 27, 1886.

MODE OF FRACTURE OF THE FIRST RIB ALONE.

The mechanism of this injury is considered by W. Arbuthnot Lane.[5] He considers that it may be fractured by force applied directly to the seat of fracture when this is in the posterior portion of the rib. The direct force required to break the first rib at this point must of necessity be great, and would probably also fracture the scapula. It may be broken by force applied to the manubrium. This is a more probable means than the first, as the first rib and cartilage are closely connected to this bone. However, on account of the great obliquity of the first costal arch, force applied to the manubrium would be much more likely to produce fracture or dislocation of the sternum than fracture of the first rib or cartilage alone. The most likely way Mr. Lane considers to be that the first rib is broken by force transmitted to it through the clavicle. In a paper,[6] "One Mode of Fracture of the Sternum," he showed the immense leverage exerted by the clavicle on the anterior portion of the first rib when force is applied in a vertical direction to the shoulder or outer end of the clavicle. Mr. Lane considers that he proved that the force so transmitted by the clavicle tended to fracture of itself (probably the common result), the rib, the first costal cartilages, one or both, and to fracture or dislocate the sternum at the junction of the manubrium and gladiolus; in fact, to break the costal arch, which consists of the first two ribs with their cartilages and the manubrium, or tear it away from the gladiolus.

LAPAROTOMY IN THE TREATMENT OF PENETRATING WOUNDS AND VISCERAL INJURIES OF THE ABDOMEN.

Rarely do we come across a more practical paper than that contributed by F. S. Dennis,[7] on the above subject. The paper and discussion deserves careful attention from every surgeon and we append some of the conclusions. Dr. Dennis considers that penetrating stab wounds of the abdomen are less fatal than penetrating gunshot wounds. That if the stab wound has injured the intestines or any abdominal organ or if any doubt exists, laparotomy is indicated. Laparotomy offers no great additional danger to the patient if properly performed under the strictest antiseptic precautions. The enlargement of the original wound for an examination of the peritoneal cavity will not enable the surgeon to exclude in all cases fæcal extravasation, perforation, volvulus or hæmorrhage. The size, shape, character and velocity of the bullet, the attitude of the patient, the kind of weapon used to produce a stab wound, seem to influence the question of laparotomy.

If there is any value in abdominal section, it should be promptly performed, irrespective of the facts connected with the penetrating abdominal wound. Fatal hæmorrhage from the large venous trunks in the abdomen may occur, and this hæmorrhage not be discovered until the peritoneal cavity is about to be closed. The sutures, if properly applied, will close the perforation in every case, no matter how lacerated these wounds are. The sutures will close the wound in case of resection of the gut, so that no leakage will occur if water is forced through the sutured intestine. The success of laparotomy is to be attained where every arrangement is complete and perfect. Everything depends upon the preparation which is made for this operation, and the antiseptic conditions under which it is performed. Shock, perforations, and the resections of injured parts of the canal, are all important steps in this operation.

Dr. Dennis further believes that in the present unsettled state of opinion, it would seem best not to perform this operation in medico-legal cases without the full sanction and support of a consultation.

DANGER OF GANGRENE TO THE INTESTINE INCURRED BY SEPARATION FROM ITS MESENTERY.

D. G. Zesas,[8] in an interesting article, has published the results of his experiments (on this subject), with a brief *résumé* of the most recent investigations. His observations show that the vitality of the intestine is dependent upon the integrity of the vascular system at its mesenteric attachment. This cannot be injured without great danger of gangrene resulting from interruption of nutrition. Separation, on the other hand, of the mesentery not less distant than two to three cm. is comparatively harmless, since the abundant anastonosis distally situated protect the intestine from interference of nutrition without difficulty. His conclusions are:

(1) That portion of intestine must always be resected which has been separated from its mesentery at its point of attachment to the gut, for gangrene is inevitable.

(2) Resection is not necessary (of the separated tract) when the point of separation is two to three cm. distant from the intestinal attachment.

(3) The greater the extent to which the intestine is separated the greater the danger of gangrene.

(4) In transverse sections of the intestine the mesenteric separation should be avoided beyond the line of division; or danger of gangrene occurs.

(5) Small and large intestine tolerate equally well a distant separation from their mesenteria.

EXTIRPATION OF RECTUM FOR HIGH-SEATED CARCINOMA.

Ordinarily cases of carcinoma of the rectum whose upper border cannot be reached by examination per anum, and in which infiltration has fixed the adjacent tissues are considered beyond surgical interference.

The limited field of operation available to the surgeon even after removal of the coccyx, has caused the removal of these tumors to be exceedingly difficult and uncertain. Kraske[9] has attempted to enlarge the field of operation by a partial excision of the sacrum. After preliminary dissection on the cadaver to demonstrate the practicability of his proposed operation he extirpated the rectum in the living subject successfully in the following manner: With the patient lying on the right side an incision is made in the median line from the centre of the sacrum to the posterior border of the anus, through the soft parts to the bone. The left gluteus muscle is dissected from its insertion to the lower portion of the lateral border of the sacrum — the coccyx is excised; then the exposed greater sacro-sciatic ligament (tuberoso-sacrum) and the underlying lesser ligament (spinosa-sacrum) close to their attachment to the sacrum are divided. The edges of the incision are separated by retractors. The left border of the sacrum is then chiseled away

[5] Trans. Path. Soc. 1885, 36, p. 327.
[6] Trans. Path. Soc., 1884.
[7] Med. News, 1886, vol. 68, pp. 225, 253.
[8] Archiv. für Klin. Chirurgie, Bd. 33, H'ft 2.
[9] Archiv. für Klin. Chirurg., xxxiii, H'ft 3.

along a curved line (concavity to the left) commencing at a point on a level with the third posterior sacral foramen passing through the lower border of the same foramen and continued downwards and inwards to the left inferior sacral cornu. No regard is paid to the posterior division of the sacral nerves. The anterior division of the fourth and fifth nerves are divided but not of the third. After the remaining soft parts covering that portion of the rectum thus exposed are divided, the patient is placed in the lithotomy position with pelvis well elevated. The lower end of the rectum divided at the anus or at the lower border of the disease — the sphincter is often saved — the intestine can be isolated to the sigmoid flexure with considerable ease and accuracy. Of the structures involved the insertion of the glutæuo — the sacro-sciatic ligaments — the posterior branches of the third, fourth or fifth sacral nerve, result in no essential disturbance of function. The anterior branch of the third sacral, which is an important part of the sacral plexus is not injured, nor is the sacral canal opened.

The peritoneal cavity if opened by high section of the rectum is closed by suturing. The wound is packed with iodoform gauze after draining the peritoneal cavity.

TREATMENT OF THE PERITYPHILITIC ABSCESS.

In a paper contributed to the Practitioner's Society of New York [10] Dr. W. T. Bull calls attention to the vital necessity of an early needle exploration of perityphilitic abscesses followed by the immediate evacuation of pus. The question in these cases is to determine when pus has formed. Dr. Bull records a case in which a perityphilitic abscess was opened forty-eight hours after the symptoms became acute and the patient took to bed. He considers that the thorough exploration with the needle and hypodermic syringe is imperative in these cases. He uses a good sized needle (No. 3 or 4 of the French scale of urethral instruments) and a "tight" syringe. He considers the punctures harmless; and, not only would he aspirate in the iliac fossa but considers that one should also puncture through the lumbar region, with the needle, passing it downward and forward towards the middle of the iliac fossa, when punctures directly into the fossa or the tumor occupying it are fruitless.

Dr. John Homans [11] reports a case in which he operated upon a perityphilitic abscess within forty-eight hours of the doctor's first visit. He could not find a dull place in which to pass a needle and so dissected down through the locality. If he had passed a needle in he would have perforated the bowel four times before the needle would have reached pus. The patient recovered. From these recorded cases, early exploration of acute perityphilitis becomes imperative to the surgeon.

NEPHRECTOMY.

Samuel W. Gross in a paper considering the "Indications and Contra-Indications" for this operation [12] has made a valuable addition to this interesting subject. Of two hundred and thirty-three cases of extirpation of the kidney which he has collected he finds a mortality of 44.63 per cent. Of the entire number, two hundred and thirty-three, one hundred and eleven by the lumbar incision indicate a mortality of 36.93 per cent., while of one hundred and twenty by the ventral incision 50.83 per cent., died. This makes the fatality of the abdominal operation greater by 13.90 per cent. than that of the lumbar operation.

Dr. Gross after carefully analyzing the facts that he has collected, feels justified in formulating the following propositions:

First. That lumbar nephrectomy is a safer operation than abdominal nephrectomy.

Second. That primary extirpation of the kidney is indicated, first, in sarcoma in adult subjects, secondly, in benign neoplasms at any age; thirdly, in the early stage of tubercular disease; fourthly, in rupture of the ureter; and, lastly, in ureteral fistula.

Third. That nephrectomy should not be resorted to until after the failure of other measures, first, in subcutaneous lacerations of the kidney; secondly, in protrusions of the kidney through a wound in the loin; thirdly, in recent wounds of the kidney or of the ureter, inflicted in the performance of ovariotomy, hysterectomy, or other operations; fourthly, in suppurative lesions; fifthly, in hydronephrosis and cysts; sixthly, in calculus of an otherwise healthy kidney; and, finally, in painful floating kidney.

Fourth. That nephrectomy is absolutely contra-indicated, first, in sarcoma of children; secondly, in sarcoma at any age, unless, perhaps, the disease can be diagnosticated and removed at an early stage; and, thirdly, in the advanced period of tubercular disease.

Le Dentu [13] considers the operation to be contra-indicated in the following cases:

(1) Sarcoma in children.
(2) Carcinoma except in cases of early diagnosis.
(3) Advanced tuberculosis.
(4) Other affections. Pyo and hydronephrosis. Also ren mobilis which has resisted all other therapeutic attempts.

He describes two operations.

(1) Extra peritoneal.
(2) Intra (or more properly named) trans peritoneal. This has a very limited field only, and is to be performed in cases of wandering kidney with a thin pedicle and of large hydronephrosis or neoplasms which project far between the peritoneal folds. But in such cases it is doubtful if any operation would be justifiable. In describing the operation the full details are of value.

I. EXTRA PERITONEAL OPERATION.

The position recommended for the patient as most satisfactory is one half between prone and lateral decubitus resting on a firm pillow placed between the thorax and pelvis so as to give as large a field for operation as possible. It is also most favorable for forcing the tumor into the wound if required.

The use of the thermo-cautery to control hæmorrhage is discountenanced. It is claimed to interfere with a rapid recovery, and is inefficient to stop hæmorrhage except that from small vessels.

Incision. Is varied with each case but in general one vertically downwards from the eleventh to twelfth rib to the iliac crest is recommended. This can be prolonged backward at its superior end or forward at its inferior, if a larger incision is required. (Czerny, Clement Lucas). The tip of the twelfth rib is the only portion of the thoracic border which can be resected without danger of injury to the pleura.

[10] Medical Record, March 6, 1886, p. 265.
[11] New York Medical Record, May 1, 1886, p. 496.
[12] Tr. Am. Surg. Assoc., 1885, III, 109-129.
[13] Technique de la nephrectomie. Revue de Chir., 1886, No. 1 & 2.

Enucleation. When the capsule is found adherent to important structures or organs, it is incised along the greater curvature of the kidney and the organ enucleated through the incision.

Pedicle. Is best ligated *en masse* with silk or catgut ligatures, which can be reinforced with an elastic ligature if necessary. By temporarily securing the pedicle with a clamp the tumor can be removed and a convenient space obtained to permanently ligate it.

Treatment of the wound. If the extirpation has been complete the wound can be drained and closed. When the removal has been partial it is advised to pack the wound with antiseptic gauze and to allow it to close by granulation.

The emergencies which can occur are:

Wounds of the pleuro-peritoneum or intestines. These should be sutured at once.

Hæmorrhage. If the bleeding vessel cannot be seen the pedicle should be secured as rapidly as possible. Parenchymatous bleeding is rare and controlled by packing.

II. INTRAPERITONEAL OPERATION.

Incision. ("Langenbuch's"). At the outer border of the corresponding rectus muscle. The incision of the posterior layer of peritoneum is made externally to the mesocolon.

Pedicle. Is to be ligated previous to enucleation to diminish the danger of hæmorrhage.

Treatment of the wound. The cavity resulting from the operation should be drained posteriorly through a lumbar incision and the wound of the peritoneum then closed.

(*To be continued.*)

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.[1]

ALBERT N. BLODGETT, M.D., SECRETARY.

Dr. H. C. Haven read a lengthy and elaborate paper on

THE ETIOLOGY AND TREATMENT OF SUMMER DIARRHŒA OF INFANTS.

Dr. Buckingham said that the paper of Dr. Haven is a hard one to discuss without having it before one, because it deals largely with statistics. He agreed with it, that in estimating the value of children's foods, great consideration should be paid to other factors, and that a child with good hygienic surroundings and comparatively poor food, will often thrive more than another child with better food but poorer surroundings. He was glad that Dr. Haven had emphasized this fact because it is so often ignored by writers on the subject.

It is certainly rational as is stated by the writer, when constructing an artificial food, to copy as nearly as may be the natural food of the child. He was unable, however, to agree with Dr. Haven, if he had understood him rightly, that the food need not vary in strength with the age of the child; for although it may be true that the mother's milk does not vary from month to month, a matter about which he expressed no opinion, yet he believed it to be a clinical fact that many children do not digest so undiluted a food at birth, as they can a few months later, even of a kind on which they do reasonably well when it is diluted. He furthermore disagreed with the reader as to the clot being of no importance.

The speaker had had no experience with some of the foods studied by Dr. Haven, but had for some years used mostly a mixture of milk and cream, sweetened, made alkaline and more or less diluted. This he had used both in private practice and elsewhere; largely in the children's room of the Boston Dispensary, and with increasing confidence. The objection to cream on the ground of expense and of its greater age, he had obviated by having the milk stand a half hour or an hour, and then pouring from the top as much as may be wanted for the day's use. Of course the value of this course depends on a certain reliability on the part of the milkman: but the method, which is not original with him, does often give practical results, even when used in dispensary practice in this city. The suggestion of the reader that the salts in milk play an important part may prove true. It is certainly rational to suppose so. Practically he had himself used the alkaline bicarbonates for making milk alkaline; but had changed to lime-water, at first in dispensary practice, on account of its greater convenience, and afterward in private practice, using half as much lime-water as milk, and further diluting with water if he thought proper. He had not seen any difference in the result.

It is interesting to observe that Dr. Haven got no starch reaction in the fæces of babies into whose food barley water entered, thus bearing out the statements of physiologists that the parotid has commonly, though not always, a diastatic power at birth. When we remember the further results of the laboratory, that the pancreas has no such power for two or three months, although to this rule also, there are exceptions, we can understand that the reader's results are in no way incompatible with the common clinical experience that where starch enters largely into babies' food, the result is often disastrous. The reader's statement that barley contains in itself some diastatic power was of interest.

Dr. Bennett F. Davenport spoke of the

PHYSICAL AND CHEMICAL QUALITIES OF ORDINARY COWS' MILK,

and added: The question of the age of the milk which is given to our city children, I consider as of very much greater importance than it is usually deemed by physicians. There is no fluid that I know of which is a more rapid absorbent of foul odors of all kinds, or which offers a more fertile field for bacterial growths. Yet most of the milk, even when just delivered to the consumers in this city is already in its third day of age, and has been exposed to a probability of contamination so great that I very much wonder that it does not become downright soured before the time of the next daily delivery. Very much of it is but very little short of this stage. I am firmly persuaded that it is to this changed condition in the milk, to which city folks have become so accustomed, as to consider it the proper and natural condition, that a very large proportion of the summer diarrhœa, and the resulting mortality among the children in our cities is due. If

[1] Concluded from page 31.

any one wants ocular proof of the grosser forms of contamination to which city milk is exposed, he has but to visit any of the larger milk depots of the city, and to look at the nature and the quantity of the foreign material left upon the cloth strainers connected with the centrifugal machines used for separating the cream from the surplus milk of the day. If he does not then learn by seeing with his own eyes what he could otherwise hardly be brought to believe to be possible, I am very much mistaken as to what are the real facts. Very fortunate indeed, would it be if only the firm and already dissolved impurities could also be thus readily separated out from the milk.

We, as physicians, have learned to know that milk about upon the point of changing will more disturb the digestion of a child than that which has already turned sour. I believe that the difference in the coagulation of breast and cow's milk in a child's stomach is more owing to the difference in the chemical reaction of these two milks, and in the amount of albuminoids contained therein, rather than to any difference in the nature of these albuminoids, for cow's milk, even when fresh, is of an acid reaction, while breast milk is neutral, or may be slightly alkaline. Then, too, cow's milk contains a much larger amount of albuminoids. Making cow's milk of a neutral or slightly alkaline reaction will render this curd finer and softer, and this is also accomplished by diluting with fluids or with soft solids, for which barley flour or malted extract serves well.

When it is desired to add cream to the diluted and sweetened milk when prepared for a child, I think it is better here in the city to use sweet cream raised by the centrifugal machine, rather than that obtained by separation from standing, which necessitates it being just so much the older, when one of the chief troubles is that it is already too old. Such sweet cream is to be had at the large milk depots in the city.

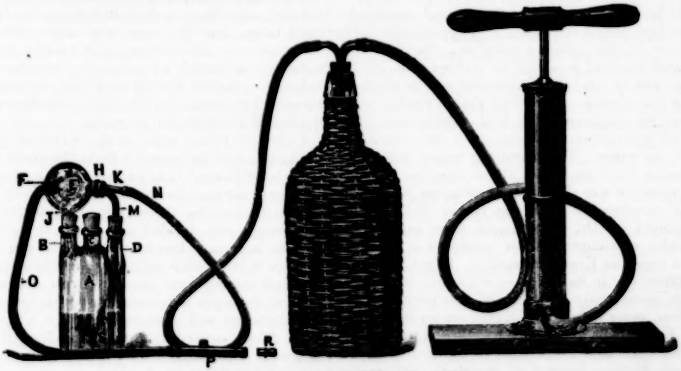
I think that if physicians would instruct all their patients to demand that their milk be delivered to them the same day that it is brought into the city from the country, that this would become the more common custom of the trade, and that there would be a marked decrease in the infant mortality during the summer months, for if we cannot secure proper cleanliness in the care of the milk we might at least thus shorten materially the time during which fermentative contaminations would have a chance to work out their harmful changes.

Dr. George W. Galvin exhibited an

IMPROVED INHALER,

which he describes as follows:

The inhaler is the invention of Dr. Geo. A. Evans,



LEACH & GREENE, 165 TREMONT ST., BOSTON.

of Brooklyn, New York, and a full description of it, with a group of cases treated by him, was published in the *New York Medical Journal*, March 6, 1886. The great obstacle to overcome in the local treatment of pulmonary diseases, is the condensation of the vaporized medicament, in the mouth, pharynx and upper air passages. This has been overcome by Dr. Evans' instrument, which can reduce any fluid medicine, or solution to so fine a degree that it can pass the bronchial tubes without condensing and reach the air cells of the lungs in which is stored the residual air. The changes in the lungs in pulmonary phthisis bring consolidation, tissue necrosis, putrefaction, decomposition, and septic absorption (I am not now considering tubercle, its nature, etc., but what is considered pulmonary consumption), it is natural to suppose that if we can convey to the lung an antiseptic vapor which will reach the part undergoing the pathological changes we should obtain practical results from the local treatment of pulmonary affections.

The apparatus consists of an air condensor, an air chamber (flask) for preserving a continuous current of air, a three-mouthed bottle, "Wolf's;" a spray chamber having three mouths, spray tubes; respiratory tube; mouth-piece.

A spray of the solution in the bottle is thrown (by means of compressed air), against the opposite wall with sufficient force to produce a thorough churning with the atmospheric air, a fine vapor, resembling cigar smoke, which escapes through one of the openings in the glass air-chamber to the respiratory tube.

During inspiration through the mouth-piece, air enters the middle mouth of the bottle and displaces the vapor of which the bottle is full. During expiration the air in its turn is displaced passing out of the middle mouth of the bottle, to make room for the

vapor which passes from the glass-air chamber to the bottle, where it accumulates for the next inhalation.

A vapor produced by means of this apparatus condenses slowly, 50 cu. in. of a vaporized solution, containing carbolic acid, borax, glycerine and water, requiring twenty minutes at a temperature of 60° F. to entirely condense.

Ten cases now reported in this JOURNAL with a cessation of symptoms which leads the patients to consider themselves cured, one case of my own far advanced in the second stage of chronic catarrhal pneumonia, after ten inhalations has gained in ten days two and one-half pounds and to all intents and purposes is making a rapid recovery.

DR. W. EVERETT SMITH then exhibited a Semple's Atomizing Inhaler which he has been using in connection with Williams' Pneumatic Cabinet. This inhaler was devised by Wm. F. Semple, of Mount Vernon, Ohio, in August, 1881, and consists of a glass receptacle containing an ordinary atomizer. The medicament is held in the bottom of the jar and is atomized either by a rubber hand bulb or more effectually by a cylinder of compressed air. The spray is projected against the top of the jar, the larger particles are condensed to be re-atomized and only the very finest portions of the spray escape through the inhaling tube.

The vapor thus inhaled has been so churned as it were and broken up that it is as fine and impalpable as smoke and indeed resembles it in appearance. The mouthpiece to the inhaling tube can readily be removed and attached to a flexible rubber tube so that the vapor can be conducted wherever and in whatever direction one pleases. Any fluid that is readily atomized may be employed, the best menstruum being either fluid petrolatum or a twenty per cent. solution of glycerine in water. The resulting vapor will resist condensation for from five to fifteen minutes.

This atomizer was shown to be identical in its principles of construction with the Evans' Inhaler that was exhibited by Dr. Galvin, and when attached to the cylinder of compressed air produced as fine and perfect a vapor as Evans' apparatus. It has, however, these differences in its favor — is simpler in its construction, more easily cleaned and was perfected and in use *four years* before Dr. Evans set up his claim; yet Dr. Evans calls his atomizer a "*new* instrument."

Further than this, Dr. Evans in his article in the *New York Medical Journal* of March 6, 1886, makes no mention of and gives no credit either to the Semple Inhaler or to the Globe Inhaler of Besceer.

Dr. Evans' apparatus is faulty in two particulars; the inhaling tube is long and is complicated with three glass globes which must be kept thoroughly antiseptic if we are to assign any dangerous activity to the numerous germs of disease. The patient under treatment must moreover inhale and likewise exhale through this one tube, the three glass globes and the Wolff bottle which contains the medication; each patient ought therefore to have an entire atomizer reserved for his own particular use, since it would be practically impossible to cleanse *thoroughly* all this complicated arrangement after each application.

Dr. Evans claims, however, as an advantage in favor of his apparatus that the vapor will resist condensation for twenty minutes. But it is easily demonstrated that with any form of atomizer constructed upon these principles, the increase in the resistance to condensation depends *directly* upon the increase in the specific gravity of the fluid atomized and not upon the particular *shape* of the atomizer.

The very fact, however, that the vapor refuses to condense for so long a period as twenty minutes is an objection rather than an advantage to the method of treatment. Everyone grants that ordinary atomizers are of little benefit in the treatment of lung diseases, because the vapor from them condenses almost entirely upon the mouth and pharynx. At the same time no physician would demand that a patient suffering from pulmonary phthisis should actively inhale a medicated vapor longer than twenty or twenty-five minutes at any one time because of the physical exhaustion that would follow a longer treatment. If then the vapor that is inhaled resists condensation for so long a period as twenty minutes, Dr. Smith claimed that it is *just beginning* to be deposited upon the bronchial tubes when the treatment is stopped. He had been better satisfied with the results obtained by a vapor that did not resist condensation for nearly so long a period as that claimed by Dr. Evans.

At the same time Dr. Smith claimed it to be a fallacy that by the use of either the Semple or the Evans' Inhaler atomized vapor can be deposited upon *lung cells*, especially if these lung cells are diseased so that they are unable to be readily expanded. The vapor when finally churned in these inhalers may be deposited and very likely is deposited upon the larger bronchial tubes, but we must remember that bronchial tubes are very different from air vesicles and that the volume of air which we ordinarily breathe — the *tidal* volume — reaches *directly* only the trachea and large bronchi, but enters the air cells in obedience simply to the law of the diffusion of gases.

Unless therefore some of the external pressure of the atmosphere be removed from the chest walls, as it is in the Williams' Cabinet, so that the *complemental* volume of air can be inhaled *involuntarily* into even remote air vesicles, the only medication that can effectually reach any decided area of lung cells must be gaseous in form. But however finely you may divide aqueous vapor under ordinary conditions of temperature and atmospheric pressure, you cannot make it gaseous, for a gas is not condensed except under enormous pressure and at exceedingly low temperatures.

Dr. Smith accordingly, while praising the inhalers that were exhibited, maintained that to derive their greatest benefit they should be used in conjunction with some form of the Pneumatic Cabinet. He has used the inhaler with the cabinet since last December, and has found the results to be highly satisfactory and encouraging.

DR. BOWDITCH said that one of the important objects of any inhaler was to force the substance to be inhaled into the pulmonary structures as much as possible. Whatever the arrangement for inhalation may be, the object to be attained is the pulverization of the substance, and its forcible propulsion into the lungs. The inhaler shown by Dr. Smith is always employed in conjunction with the Pneumatic Cabinet, as an aid to its introduction or propulsion into the deeper parts of the pulmonary recesses.

DR. KNIGHT stated that the instrument exhibited by Dr. Galvin was capable of producing a finely pulverized fluid, and he had never seen anything so fully answering this demand as the one shown at this meeting.

Dr. George B. Shattuck rose and stated that he desired to warn the Section against a travelling individual calling himself Dr. Watson, who pretends to have been shipwrecked on the steamer "Oregon," and who has made appeals for aid to several of the members of the profession here. The man may be a physician, but if so he is a dishonest one, as he had received a contribution of $2.00 from Dr. Shattuck, which had been made to read $5.00 when the list reached other members of the Society.

REPORT ON WATER-SUPPLY.

Dr. Shattuck then presented the following report for the Committee of the Section appointed to consider the present condition of the water supply of the City.

Mr. Chairman:— Your Committee appointed at the meeting of this Society held June 9th, 1885, to co-operate with a similar committee from the Norfolk District Medical Society, which was appointed to take into early consideration the impurities of the Boston water-supply, and to urge upon the mayor the vital importance of promptly using all those means which the law allows to prevent further contamination of that water-supply and to remedy the contamination which exists, beg to report as follows:

Of the five gentlemen appointed upon this committee, owing to absence from town and other impediments, only the two who sign this report were actually able to serve and they did so at some little sacrifice of time and personal convenience.

On June 18th, 1885, in company with three members of the committee appointed by the Norfolk District Society, we visited the Mystic Valley, getting out of the train at Winchester, driving through Winchester and Woburn, and inspecting the tributaries to the Mystic supply and some of the principal tanneries and other industrial establishments upon their banks. The upper Mystic Pond itself was not visited, but the distance from the Winchester station, where the nearest point of pollution observed was situated, to the pond being scarcely half a mile, the possible danger of the situation was sufficiently revealed.

On the afternoon of June 22d, the same members of the two committees made a personal inspection of a portion of the watershed of the Farm Pond and Lake Cochituate water-supply.

The results of these visits of inspection were communicated to the mayor of Boston by the secretary of the joint committee, Dr. E. P. Gerry, of Jamaica Plain, under dates of August 27th and September 5th. The first of these communications, detailing the visit to the watershed of the Mystic supply, was written by Dr. Gerry himself; and the first part of the second communication, giving the results of our observations on the Cochituate watershed, was written by Dr. A. H. Nichols; the latter part of the second communication was added by the secretary and must not be accepted otherwise than as possibly expressing personal opinions of individual members of the committee, certainly not as having an official character. Both of these communications were referred by the mayor to the Boston Water Board, and appeared with some inaccuracies in the daily papers; copies are herewith appended. It is only necessary for us to say further in regard to them that, apart from some comparatively unimportant mistakes as to the names of certain manufacturing establishments, these reports contain a correct, though possibly in some instances (in that on the Mystic) rather picturesque statements of the conditions encountered by us in the Mystic and Cochituate watersheds at the time of our visit.

It is one thing to select and point out sources of pollution of water-supplies, it is another and sometimes much more difficult one to remedy them. Prior to 1884, when complaints were made against public or private corporations or individuals for violations of the provisions of Section ninety-six of Chapter eighty of the Public Statutes, a section designed to protect water-supplies, such complaints were referred to boards of health and local sheriff's juries, with results as you may imagine, going far to render nugatory the provisions of this section. In 1884, owing largely to the efforts of the city of Boston, the Legislature amended the statute so that the Supreme Judicial or Superior Court might in term time or vacation, upon the application of the mayor of a city or the selectmen of a town interested, grant an injunction against any violation of the provisions of the above-mentioned section. At the same time these questions were removed from the jurisdiction of boards of health and of sheriff's juries. Under this amendment a permanent injunction was finally obtained, in March, 1885, from the Supreme Court by the city of Boston, against one Gleason, an inn-keeper, emptying the refuse of his establisment into Pegan Brook.

We desire to say that we believe that the Boston Water Board, strengthened by this action of the Court, has, through its efficient superintendent of the Western Division of the city's water-supplies, strenuously exerted itself to abate the then and the still existing causes of pollution in the Cochituate basin.

Some of these causes can only be satisfactorily removed by the establishment of some suitable systems of sewage-disposal for the towns lying in that watershed. Suggestions for such systems may be found in the late report of the Massachusetts Drainage Commission, which if adopted would probably reduce to a minimum the evils observed by your committee. The sewerage of the Woman's Prison at Sherburne should not be allowed to remain in its present state.

The excavation of the basins of the Sudbury River System puts them in a position where the resources of nature will in all probability not be overtaxed in protecting the purity of the water therein stored. The construction of basin No. 4, which will add 5,000,000 gallons to the storage capacity of this system, has been proceeded with on the most approved modern principles for such work.

To return to the Mystic water-supply, we desire further to state that one of us, Dr. H. J. Barnes, visited that watershed a second time in company with two members of the other committee toward the end of March of this year, and found that the tributaries to Wedge Pond and the upper Mystic were still being contaminated by the tanneries and other factories in that region in a way which cannot but be regarded as liable at any time to prove detrimental and even dangerous to the health of the consumers of Mystic water. At one, at least, of the worst tanneries discharging into the Abajonna river some efforts have been made since our first visit to ameliorate its offenses; but the devices — subsidence and filtration — adopted in most instances by those tanneries, not connected with the sewer built by the city of Boston which attempt any purification of their refuse, are entirely unsatisfactory,

inasmuch as they permit the escape of dissolved organic matter from beam-houses and hide-mills, as well as the spent liquor from vats directly into the tributary streams. At the time of our first visit a large number of privies, water-closets and sinks were discharging directly or indirectly into Russell Brook (a branch of which is known as Stink Brook), and into Town Meadow Brook. These brooks flow through thickly settled portions of the town of Woburn and empty, the former into Wedge Pond after a course of half a mile, the latter immediately into Horn Pond; the contents of both, therefore, find their way pretty directly into the upper Mystic Pond. In their last report, dated December 31st, 1885, the Boston Water Board say: Considerable attention has been given to the removal of sources of pollution; but the increase of the population and the character of the business done upon the water shed of the Mystic supply make this a more difficult problem each year.

They are now of the opinion that the sources of danger from privies, water-closets and sinks have been abated, and we can only hope that this opinion is well-founded.

The basin of the Mystic is, however, so thickly populated that, even when the inhabitants take the trouble to discharge their waste into cesspools, the soil can hardly be expected to depurate it before it reaches the streams by the subsoil currents.

The Boston Water Board contemplate the abandonment of the Mystic water-supply, and in the opinion of your committee it must come to that. In the mean time, until other sources of supply can be secured, if such should prove to be required, it would seem desirable that such connection should be made with the water-supply on the south-side of the Charles River, if practicable at a reasonable expense, as would bring the Sudbury River and Cochituate supplies within the reach of the inhabitants of the Charlestown district, within short notice — should an emergency arise.

Your committee have naturally considered the question submitted to them by you from the point of view of the physician and sanitarian. They desire again, however, to state that they are fully conscious of the complexity as well as of the importance of the problems presented.

They pray to be discharged.

GEORGE B. SHATTUCK, M.D., *Chairman.*
HENRY J. BARNES, M.D.

The report of the Committee was accepted, and the Committee discharged. The secretary was directed to place a copy of this report in the hands of His Honor, the Mayor, as supplementary to the reports previously rendered to the medical societies and transmitted to the Mayor.

— By a decree of the Roman Inquisition, dated May 19, 1886, and confirmed by the Pope, Catholics are forbidden to join cremation societies, or to order their own or the bodies of others to be cremated. His Holiness, in confirming the decree, condemns the "detestable abuse of cremating human bodies."

— A contemporary calls attention to an advertisement extolling the virtues of a new make of infant's feeding-bottle, which winds up as follows: "When the baby has done drinking, it must be unscrewed and laid in a cool place, say under a tap." Poor baby!

AMERICAN OPHTHALMOLOGICAL SOCIETY.[1]

THURSDAY. — SECOND DAY. — MORNING SESSION.

THE meeting was called to order at ten o'clock.

The first paper read was entitled

THE AMBLYOPIA OF SQUINTING EYES: IS IT A DETERMINING CAUSE OR A CONSEQUENCE OF THE SQUINT?

by S. THEOBALD, M.D., of Baltimore.

He criticized the views of Alfred Graefe and Sweigger that the amblyopia exhibited by squinting eyes is a congenital effect and argued in favor of the older view that the amblyopia is secondary to the squint and due to the mental suppression of the visual image formed in the squinting eye. He stated in the first place that it is a mistake to call this variety of amblyopia "amblyopia exanopsia," as the amblyopia is not due simply to want of use of the squinting eye, but to an active cerebral process which induces a much more rapid loss of vision. Schweigger and Alfred Graefe who both accept the theory of acquired retinal identity, believe that squint is often due to a non-establishment after birth of retinal identity. If this were the case, as there would be, from the first, no stimulus to binocular fixation, the squint ought to develop in early infancy, whereas it is rarely met with then, but usually makes its appearance about the fourth or fifth year. They both also lay stress upon the fact that some squinting eyes (even where there is no alteration), retain good vision for years, while others, which have squinted but a short time, are highly amblyopic and that this contradicts the theory that the amblyopia is produced by the squint. These observations however, do not conflict with the suppression theory, for as the amblyopia doubtless develops during the forming stage of the squint, it is reasonable to suppose that in some cases it will have reached a high grade by the time the squint is fully established, while on the other hand, a marked difference in the refraction of the two eyes (because then the diplopia will be less annoying,) will explain the retention of vision in the squinting eye.

The most convincing argument, however, in favor of the suppression theory is that the peculiar regional characteristics which the amblyopia exhibits are of just such a nature as we should anticipate if this hypothesis be the correct one, but entirely inexplicable if we suppose the amblyopia to be a congenital defect.

Until more convincing evidence is adduced to sustain the congenital amblyopia theory, it was suggested that we ought to act upon the older theory, that the squint produced the loss of vision, and so give to our patients the benefit of an early operation for the correction of this deformity.

DISCUSSION.

DR. H. D. NOYES, of New York. I differ entirely from the conclusions presented in this paper. My objections are based upon an experience and careful observation for a number of years. It has been claimed that before the development of the squint such patients have had binocular vision. There is no proof of this and the evidence is against it. Again, I have the records of a large number of cases of monocular amblyopia, presumably of congenital origin, without lesion demonstrable by the ophthalmoscope, which

[1] Concluded from page 162.

have had no squint although they may or may not have hypermetropia. Binocular fixation after operation is not infrequent, but according to my experience binocular vision is obtained in only one-fifth of the cases. It is rare to find material improvement in an amblyopic eye after operation.

Dr. O. F. Wadsworth, of Boston. I agree with what Dr. Noyes has said. After a careful examination of this subject, ten years ago, I convinced myself that the amblyopia of squinting eyes was not due to disuse. At that time I thought that I was alone in that view, but on looking up the literature of the subject, I found that Schweigger had said the same thing some years before. I think that after operation, there is no decided improvement in vision. It is sometimes said that there is, but this is largely due to the fact that the vision was not carefully measured before the operation. I have never been able to increase the vision to any extent after operation.

Dr. George C. Harlan, of Philadelphia. It has been my experience that vision is not materially improved by operation. I have at times attempted to compel the patient to use the affected eye by keeping the fixing eye under the influence of atropia for a long time. In some cases, I have succeeded in improving the vision in the amblyopic eye. I recall one case in which the vision was increased from $\frac{20}{cc}$ to $\frac{20}{i}$. Some two years later, this was still retained, the axis having become straight under the use of correcting glasses.

Dr. W. F. Mittendorf, of New York. In those cases where there is a central scotoma we can not expect any improvment from an operation, but there are certain cases in which vision is at once improved. I have thought that this was to be explained by the removal of the undue pressure exerted by the internal and external recti muscles, which is different from that exerted by the superior and inferior recti. Taking away this pressure, puts the eye in a more favorable condition and we should expect better vision.

Dr. Samuel Theobald, of Baltimore. I regret that Dr. Noyes was absent when the early part of my paper was read, for I have taken up the objections which he has brought forward.

In regard to the restoration of binocular vision my test has been as follows: If we cover the eye which formerly squinted, we find that there is still a balance of power in the internal rectus. If the amblyopia is not of too great a degree, the patient is directed to fix his eyes on a certain object. The squinting eye is then covered and it at once turns in. When the covering is removed it again turns out showing that it did so to obtain an image upon a corresponding point of the retina. To my mind, that is conclusive evidence of the restoration of binocular vision. In regard to vision, I assert that where there is a considerable amount of amblyopia, there is no appreciable improvement after operation, but this has no bearing upon the question whether the amblyopia is congenital or due to suppression.

Dr. B. Alexander Randall, of Philadelphia, reported

TWO CASES OF SEVERE TRAUMATISM OF THE EYE WITH PARTIAL DISLOCATION OF THE CRYSTALLINE LENS.

In the first case, a man of fifty, there were three points of rupture of the sclera visible on the upper surface of the globe, with some tendency to hernia of the contents. The upper half of the lens was in the anterior chamber in front of the iris, the lower half apparently being in nearly the normal position. Its extraction was advised, but delay being asked, the operation was deferred. The lens receded under rest in bed and other appropriate measures. The scleral rupture healed and in spite of disseminated opacities in the lens and in the vitreous, which prevented at any time a view of the eye-ground, the vision increased to about one-thirtieth of the normal. The patient has since been at work and fairly comfortable, the other eye giving no suggestion of sympathetic trouble. The injured eye shows little tendency to grow worse, although the lens is still luxated backwards.

In the second patient, a boy of twelve, the lens was less markedly luxated, but the ophthalmoscope showed two rents in the choroid, the larger, a little outside of the macular region, the other close to the temporal margin of the optic disk. In connection with the latter there was a reddish area of choroid, embracing the upper and inner border of the disk, where the force had apparently been insufficient to rupture the membrane, but had given it a twist causing its inflammation and subsequent atrophy. The case progressed to an excellent recovery. The vision which had been lost improved to $\frac{6}{12}$M+, and the accommodation to the extent of some five dioptrics. The choroid rents healed with little but pigmentation to mark their sites.

The eye which had shown a high degree of myopic astigmatism, probably by reason of the dislocation and rotation of the lens, returned to the approximately emmetropic condition of the other eye. The early and late appearances of the eye ground were illustrated by colored sketches.

The next paper was on

BADAL'S OPERATION. LACERATION OF THE INFRA-TROCHLEAR NERVE FOR THE RELIEF OF GLAUCOMA, ETC., WITH CASES,

by J. S. Prout, M.D., of Brooklyn.

In 1882–83 Badal, of Bordeaux, proposed the laceration of the infra-trochlear nerve (*nerf nasal externe*, of the French), for the relief of glaucoma accompanied by pain. He selected this nerve because it is the direct extension of that branch of the ophthalmic, the nasal, from which the eye-ball receives its nervous supply. It emerges from the orbit, just below the insertion of the pulley of the superior oblique muscle and supplies the skin at the root and side of the nose and the caruncle, lachrymal sac and nasal duct. It is readily reached by an incision along the margin of the orbit running from the pulley to the upper margin of the tendon of the orbicularis muscle. It is small, soft, not easily recognized, lies on the periosteum and is to be taken up by a hook with its accompanying vessels and stretched and torn by pulling directly forward. Very little bleeding occurs. Sutures are used to close the wound which under ordinary dressing soon heals. Small painful nodules are sometimes left at the point of rupture. No anæsthetic is needed as the time is short and there is but little pain except when the nerve is torn. The rationale of the operation is not explained.

In severe cases, when a short delay may be fatal to the eye, he advises that the operation be combined with evacuation of the aqueous humor. A great advantage of the operation is that, as it does not attack

the eyeball, it will be accepted by patients much more willingly than a sclerotomy or iridectomy. Four of his patients assented to it only on condition that the eyeball should not be touched. When it has failed, he has not had better results from other operations.

Badal, in 1883, reported his results in twenty operations on eighteen patients, nearly all of whom were unpromising for any operation. Pain was relieved at once in ten cases, rapidly in one, gradually in five, not stated in four. Tension was relieved quickly in four, gradually in eight, not relieved in six, not stated in two. Sight had been long lost in seven, it was improved in four, not improved in four, and not stated in five.

Dr. Prout has performed the operation nine times on five patients, which he reported. All were unpromising cases. In one there was for a time, decided improvement of vision; in one there was temporary relief from moderate, and in one from severe pain; one was a case of glaucoma simplex, operated on without benefit, another a case of hæmorrhagic glaucoma, not benefitted. Others have reported much better results. In the *American Journal of Medical Sciences* for July, 1886, Dr. C. S. Bull refers to a paper by Lagrange, who strongly commends the operation, as efficient, especially against the symptom, pain.

Dr. Prout drew the following conclusions: the operation has been shown to deserve further trial, especially in cases unfit for operations on the eye-ball, it cannot make matters worse as to the eyes; relief of pain, even if only temporary, is worth procuring at the cost of so slight an operation; it is important that cases be recorded so that its value may be ascertained.

DISCUSSION.

Dr. C. S. Bull, of New York. In my cases where the operation was performed for the relief of pain in glaucoma or ciliary neuralgia, while the relief was marked immediately after the operation, it was temporary only and in every case returned.

ADVANCEMENT OF TENON'S CAPSULE IN STRABISMUS,

by H. Knapp, M.D., of New York.

This operation was devised by de Wecker five years ago. He performed it in the following manner: A piece of conjunctiva, five millimetres long and ten millimetres high, is detached from the region of the insertion of the tendon as a centre, leaving a small band near the cornea. Tenon's capsule is now incised near the insertion of the tendon and loosened alongside of and under the muscle. The capsule is then stitched forward by two sutures, entering through the conjunctiva to the capsule at the lower and upper edges of the muscle and coming out in the conjunctiva above and below the cornea. The greater the piece of capsule loosened and stitched forward the greater the effect. If the effect appear too great, the stitches are removed the next day. If not, they are allowed to remain four or five days. De Wecker used capsular advancement for cases of insufficiency to strengthen the weak muscle, and for high degrees of strabismus, both convergent and divergent.

Dr. Knapp, during the present summer, had done the operation ten times. His operation differed from that above described in leaving a broader conjunctival flap and in using a third middle suture. His intention was to advance the whole anterior portion of the vertically folded muscle and the capsule and produce plastic inflammation which through subsequent cicatrization will shorten the parts. The operation was performed in two cases of convergent strabismus due to paralysis of the external rectus. In these cases the operation caused decided improvement.

The eyes could be approached to within four millimetres of the outer commissure. The formerly paralyzed external muscle had gained a considerable degree of power. The operation was performed on two cases in which former tenotomies had not overcome the difficulty. The operation was followed by improvement in both cases. In six cases, the operation was performed for convergent strabismus of high degree with considerable amblyopia. The results have all been quite good.

In none of the cases has there been any alarming reaction, although there was for some weeks redness and swelling in the region of the advanced capsule. At first Dr. Knapp had used catgut sutures, but one gave way on one occasion and since then he has employed black-silk sutures. Antiseptic precautions have been employed in all cases. The speaker preferred advancement of Tenon's capsule to simple advancement of the tendon, because the operation is simpler and attended with less risk. The preservation of the natural attachment exposes the muscle less to inflammation and there can be no undue retraction in cases of failures. His experience with limited advancement of Tenon's capsule has been quite encouraging.

DISCUSSION.

Dr. George C. Harlan, of Philadelphia. Does Dr. Knapp consider this a safe operation? Four or five years ago I did the operation a number of times and was much pleased with it until I had a case of pan-ophthalmitis. Of course antiseptic precautions were not employed at that time.

Dr. H. Knapp. I considered it a dangerous operation a year ago, but my views have changed considerably since then. Under antiseptic precautions, the danger is much lessened. Where suppuration occurs within the first twenty-four hours, it is certainly the result of infection, and not due to the traumatism alone.

A CASE OF TUMOR OF THE LEFT OCCIPITAL LOBE,

by Dr. Emil Gruening, of New York.

The chief interest in the case lay in the fact that the disease of the brain was localized by the existence of homonymous hemianopsia. Diagrams showing the course of the optic fibres were shown. At the autopsy a hard mass was found in the left occipital lobe and the whole cortex of this lobe was destroyed.

NEW FORMATION IN THE VITREOUS OF BOTH EYES,

by Dr. J. S. Prout, of Brooklyn.

The patient was a young man, aged twenty-six. He had never had any trouble with the eyes. In the right eye there is a band arching forward. There is no evidence of any relation to the papilla. The speaker thought that in all probability it was a remnant of the fœtal circulation of the vitreous. In the left eye there was a similar band. Drawings showing the appearance presented were exhibited.

Dr. Edward Jackson, of Philadelphia, presented a

LENS SERIES FOR THE REFRACTION-OPHTHALMOSCOPE.

Dr. John Green exhibited and described a new

SERIES OF TEST-LETTERS.

DR. CHARLES A. OLIVER, of Philadelphia, presented a

SET OF METRIC TEST-LETTERS,

and words for determining the amount and range of accommodation. They are made of six sizes of differently arranged words; each word contains three or four of the seven letters, C, D, E, T, O, L, F. Each letter is made in exact conformation with the Snellon basis. The adoption of such a series puts the determination of the acuteness of vision and of accommodation upon a uniform basis.

A CASE OF RETINITIS ALBUMINURICA: INDUCED PREMATURE LABOR,

by DR. S. D. RISLEY, of Philadelphia.

The patient, the wife of a physician, was seen September 24, 1884. She was between the fourth and fifth month of pregnancy. She had suffered with headache and giddiness. The urine had been examined a week previously and no albumen found. At this time there was marked disturbance of vision. In a previous pregnancy she had had albuminuria, but no trouble with sight. In the second pregnancy there had been no trouble.

The ophthalmoscope showed albuminuric retinitis of both eyes. The urine contained a large quantity of albumen. After standing two days, the albumen constituted four-fifths of the entire contents of the test-tube. After consultation with her husband and Dr. William Goodell, the induction of abortion was advised, but to this the patient positively refused to consent. Finally, after consultation with her clergyman, she consented.

Labor was induced, and she was delivered of a fœtus at five months. She then passed into an unconscious condition, in which she remained four days. There were no convulsions as consciousness gradually returned; evidences of right hemiplegia with aphasia was noted. The quantity of albumen gradually diminished. Six months later the lady was able to return to the office. There were still some traces of aphasia. Vision was greatly improved.

The object in reporting the case was to put on record an additional experience in this problem presenting so many serious considerations.

DR. B. ALEXANDER RANDALL exhibited a

MODIFICATION OF THE LORING OPHTHALMOSCOPE,

which consisted in adding a series of cylinders from .25 D. to 4 D.

THE FREQUENT INSTILLATION OF A TWO PER CENT. SOLUTION OF NITRATE OF SILVER IN PURULENT OPHTHALMIA,

by DR. J. A. ANDREWS, of New York.

He had employed this method in thirty-five cases of gonorrhœal ophthalmia, and the eyes were seriously damaged in none of them. The cases were all severe, with much discharge, chemosis, and swelling of the lids. The applications were repeated usually three times a day, sometimes as often as five times per day. The use of the nitrate of silver is graduated to the amount of hyperæmia, and especially to the amount of swelling of the lids. If this is marked, I do not fear to repeat the instillations frequently.

DR. RUSSELL MURDOCH, of Baltimore, exhibited an impervious covering for the sponge in the administration of ether.

MEASUREMENT OF ASTIGMATISM BY THE OPHTHALMOMETER OF JAVAL AND CHIOTZ,

by DR. H. D. NOYES, of New York.

The instrument is useful for purposes of rapid determination, for confirmation, and in doubtful cases of diagnosis.

Dr. H. D. Noyes also read the following papers by title:

BURNS OF THE EYE BY FULMINATE OF SILVER AND FULMINATE OF MERCURY.

CASES OF FOREIGN BODIES IN THE GLOBE, INCLUDING TWO CASES OF SPONTANEOUS EXTRUSION.

The officers for the ensuing year are as follows: *President*, Dr. William F. Norris, of Philadelphia; *Vice-President*, Dr. Hasket Derby, of Boston; *Secretary and Treasurer*, Dr. O. F. Wadsworth, of Boston; *Corresponding Secretary*, Dr. J. S. Prout, of Brooklyn.

The next meeting will be held at the Pequot House, New London, Conn., on the third Wednesday of July, 1887.

Adjourned.

ANNUAL MEETING OF THE AMERICAN NEUROLOGICAL ASSOCIATION.[1]

JULY 21, 22, 23, LONG BRANCH, N. J.

THURSDAY, JULY 22.

DR. C. L. DANA, of New York, read a paper on

PSEUDO-TABES FROM ARSENICAL POISONING.

The reader remarked that the first object of his paper was to report two somewhat unique cases of arsenical paralysis presenting the symptoms of tabes dorsalis. Next, to show that arsenical paralysis, like paralysis from diphtheritic poisoning and from alcohol, presents two types. One might be called the mixed or ordinary form, and the other the ataxic form. And to show also, if possible, that the ordinary teaching that arsenical paralysis is due to a diffuse myelitis is not correct, and that these paralyses are really the result of a multiple neuritis.

The conclusions arrived at were:

(1) That a disease resembling locomotor ataxia may be caused by arsenic given medicinally, absorbed from wall papers, or taken in a single large dose.

(2) That arsenical paralysis of this type, and arsenical paralysis of other types are not due to a diffuse myelitis, as has been taught, but to a multiple neuritis.

(3) That arsenical paralyses, like those from diphtheria, alcohol, and probably other infections and poisons, are of two types.

(a) The ordinary mixed motor and sensory paralysis.

(b) The pseudo-tabic form, in which there is no pronounced motor paralysis, but marked sensory troubles, especially ataxia.

DR. MILLS said the subject of arsenical paralysis was one in which he was especially interested. In referring to the case which Dr. Dana mentioned, and which he (Dr. Mills) had reported, he said that the case was one of poisoning from Paris green, and that since

[1] Continued from page 166.

then he had reported a series of cases. He thought that in these cases of metallic poisoning the true way was, not to regard it as a myelitis, neuritis, or myositis, but to look at it as a protoplasmic poisoning. That the poison, as the causing agent, affects the nervous protoplasm in varying degrees, according to the circumstances, and although Dr. Dana had asserted his reasons for regarding this disease as a neuritis, he regarded it as a myelitis. In the case just mentioned, other members of the family partook of the poison; one died with symptoms of encephalitis, one or two came near being permanently paralyzed, and others remained with the symptoms of neuritis; this, Dr. Mills thought, indicated that a broader and better generalization be taken.

Dr. Sinkler stated that he could recall some points in the case Dr. Mills mentioned; there was atrophy of the muscles of the upper extremities, atony of the bladder, marked reaction of degeneration, but the patient suffered no pain.

Dr. Mills regretted he could not substantiate Dr. Sinkler's remarks, but he thought the patient suffered considerable pain, and anodynes were used largely.

Dr. Jacoby stated that he had reported a case of lead-poisoning in which the diagnosis was very difficult indeed. The diagnosis was pseudo-tabes, due to lead-poisoning. He had expressed his opinion that the ataxia was due to a lesion in the cord; that view he now desired to correct. He would now say it was a multiple neuritis, due to lead-poisoning. The patient recovered completely, with absolute return of the patella-tendon reflexes.

Dr. Sachs remarked that, in speaking of these cases, they were called arsenical and lead poisoning, as though the symptoms were similar; these poisons have also been compared to the poisoning in diphtheria. Now, as we know that in infections the poison spreads to the most distant parts of the body, why should it not, in these cases, be peripheral, as well as central?

Dr. Mills thought arsenical-poisoning could produce a neuritis, but myelitis or cerebritis more often occurred.

Dr. Dana, in closing the discussion, stated that perhaps he had put his case rather stronger than he had intended, but the ordinary teaching was that arsenical-poisoning produced a myelitis. The main point he desired to bring out was that there is a form of the disease resembling locomotor ataxia; he thought this should be known. He also wished to show that arsenical-poisoning can bring about a multiple neuritis.

Dr. Sinkler read a paper on

THE TREATMENT OF FACIAL SPASM.

He entered at length into the results which have been secured by others in such cases, quoting an interesting case that came under his observation, in which the biceps of the right arm was also affected. All the teeth upon the right side of the mouth were removed, but gave no relief. Gelsemium, cannabis-indica, quinine, eserine, nitro-glycerine, and electricity were used, but without any marked result; in fact, the pain now extended to the right thigh and leg. The operation of stretching the facial nerve was decided upon after consultation. From the date of the operation up to the present time there has been no spasm; the force used in the stretching of the nerve was estimated to be about twenty-five pounds. When Dr. Sinkler saw the patient, about four weeks after the operation, the right side of the face was palsied, she could not shut the right eye, and the corner of the mouth hung down; but she assured him she was willing to remain that way, rather than return to the former terrible twitching. Dr. Sinkler thought, in this case, the disease was of peripheral origin, and that in such cases, after therapeutic measures have failed to relieve, the operation of stretching should be performed without any unnecessary delay.

Dr. Massey remarked that he had seen a case a few days since which was first brought to him a year ago. He had, at that time, applied the galvanic current, and during the following year the patient had been entirely free from pain.

Dr. Dana thought statistics were rather fallacious; also that some cases might get well with a slight operation, or perhaps none at all. It must be taken into account that the case mentioned by Dr. Sinkler had only been operated upon four months ago.

Dr. E. D. Fisher, of New York, read a paper on

REMARKS ON EPILEPSY,

enumerating the various phenomena occurring during convulsions. He relied chiefly upon the use of bromides for the relief and cure of the disease.

Dr. Sachs read a paper, entitled:

INTRACEREBRAL HEMORRHAGE IN THE YOUNG.

After referring to the increased attention neurologists are paying to the cerebral accidents of children, the writer recorded his conviction that intracerebral hemorrhage is more frequent in children than it is generally supposed to be, and that many cases of this sort are classified under the head of meningeal hemorrhage. Dr. Sachs then reported two cases of intracerebral hemorrhage, one in a boy two and a half years of age, and the other a young man of nineteen years. The first case was given in full in order to place the diagnosis upon a firm basis. The child had typical right hemiplegia with aphasia without coma or convulsions at the time of onset. The onset was slow, aphasia setting in first, paralysis of the arm and leg some hours later. The recovery was typical of that which takes place in many cases of adult hemiplegia from apoplexy.

The reasons were given why the writer held that in this case the apoplectic attack was due to hemorrhage rather than to embolism or thrombosis. As regards the differential diagnosis between meningeal and intracerebral hemorrhage, the lack of convulsions seemed to be of unusual significance. In meningeal hemorrhage, convulsions are invariably present and their absence might argue, other things being equal, in favor of intracerebral hemorrhage. In the second case the young man had had two apoplectic attacks, exactly one year apart. The histories of these attacks were very similar to the one given in the first case. In the first mild attack all symptoms developed and ended typically. In the second attack the onset was slow, there was coma lasting for over eighteen hours, and recovery was not complete, contractions having set in in the affected arm. No convulsions at any time. There was no specific history.

Using these two cases as a basis, the author of the paper entered upon a discussion of the changes in the walls of the cerebral arteries, permitting an effusion of blood into the brain substance. Autopsies on this condition are very scarce, but there is good reason for supposing (reference was here made to some recently

reported cases of Dr. Osler) that miliary aneurisms occur in young children, and that fatty degeneration of the cerebral arteries (permitting transudation of blood through the vessel-walls — Recklinghausen) is not an infrequent condition:

Discussion was invited on the following points:

(1) Frequency of intracerebral as compared with meningeal hemorrhage in young persons not the subjects of specific disease.

(2) The value of convulsions as a factor in differential diagnosis.

(3) Pathological changes in the walls of the cerebral arteries in the young.

Dr. Mills thought that intracranial hemorrhage occurred in the young more frequently than was imagined. He had made three autopsies in children from the same family, all three of whom had died within a few days after birth; he found extensive meningeal hemorrhage in all these cases.

Dr. Lloyd then quoted two cases occurring in young men, one eighteen years of age and the other less. In one case it followed close upon an attack of diphtheria; in the other, the elder, the patient complained in the morning of not feeling very well, and was compelled to go back to his bed. When Dr. Lloyd saw him, he had passed into coma with convulsions on the right side of the body. In this case the patient was a confirmed inebriate. When first seen, coma and convulsions had set in, there were waves of spasms sweeping over to the paralyzed side, there was also extreme lateral deviation of the eyes; right facial paralysis, face being drawn to the left side. Dr. Lloyd was a little puzzled about the case, as he did not expect to find a confirmed drunkard at the age of eighteen years. The boy died in a few hours and the case had to be handed to the coroner. At the autopsy there was absolutely nothing found which would account for the conditions mentioned.

Dr. L. Zenner thought in these cases it was difficult to tell except by the autopsy, whether it was hemorrhage, thrombosis or embolism; he considered that mere symptomatology was not sufficient in these cases for a diagnosis to be based on.

Dr. McNutt spoke of a case in which there were convulsive movements on the body and face of the same side. At the post-mortem the brain was examined very carefully, but there was simply œdema of the brain; there was no hemorrhage on either side of the brain.

Dr. Amidon thought the lesion might occur in the circulatory apparatus, more especially the arteries. The most natural thing to look for would be miliary aneurism as remarked by Dr. Sachs, although he was inclined to think that that was a disease of adult life. He has seen pathological specimens where the aorta was narrowed, the patient dying very suddenly from inter-cerebral hemorrhage. Barié has reported twenty-seven cases in which he states the narrowing of the arteries is almost always below the origin of the left subclavian artery: some of the patients previously suffered from vicarious menstruation or epistaxis.

Dr. Sachs begged attention to a fact in regard to prognosis. He thought it made a great difference whether the child suffered from convulsions or not.

Dr. Zenner, of Cincinnati, presented a case of

AUCTIONEER'S CRAMP,

remarking that it came under that large group of cases termed professional neuroses, which generally affected the muscles of the extremities, but in this case the muscles of the face only were involved, mainly if not entirely those of articulation, and as far as he knew nothing similar had been reported, and, therefore, he thought it of great interest to the profession. The doctor then gave the following history:

Patient a male, 45 years of age, of good family history, had always had excellent health, following the occupation of an auctioneer. In March, 1885, was confined to his house for a month with an ulcer upon one of his legs; during that time his health, with that exception, was good. He had been an exceptionally busy man, calling sales from morning till night, often refusing to leave the sale to obtain his lunch. After recovering from the ulcer and resuming his calling he noticed at the first sale which he cried that he had some difficulty in his articulation but it was not such as to cause him to desist from speaking. After three or four successive sales, during which time the difficulty kept increasing, he was compelled to abandon business entirely. He now began to notice occasional slight difficulty in articulation in ordinary conversation and also some subjective symptoms consisting of a sense of fatigue of the muscles after talking, a sense of throbbing and a dragging sensation at the left corner of the mouth. Dr. Zenner saw him about a month after these symptoms were first felt. At that time there was considerable general nervousness shown, further than this there have been no symptoms of disease, his general health being excellent. His weight is about the same, appetite fair and sleeps well, general motility on application of electricity normal, as are also the tendon-reflexes.

Dr. Zenner presented the patient and drew attention to the fact that when the face was in a state of rest, there was a certain increase of depth of the nasal fold and a drawing-in of the left corner of the mouth, which was due to a tonic spasm; the patient also felt a certain sense of pressure there, as though the cheek were pressed against the teeth. In ordinary conversation the contraction of the muscles are scarcely visible, in fact some of his acquaintances have not noticed anything abnormal.

Dr. Zenner then requested the patient to call five rapidly as in calling a sale. On the rapid repetition of the word the contraction of the muscles upon the left side of the face was very marked, these being tense like a rigid band while the right corner of the mouth was drawn upward making it almost appear as though the contraction of the muscles was upon the right side of the face while the left to an ordinary observer would appear almost normal; the patient also complained of a sense of very painful fatigue on the left side of the face. The orbicularis oris in this case seemed to be the muscle principally involved, but the other muscles were somewhat affected. Dr. Zenner also stated that the patient himself had discovered that by putting the end of a pencil under the lip and pushing it upward to remove the tension he could be much relieved and could articulate much better (this effect was proved by the patient before the meeting). In this case electricity, massage and manipulation have been applied. The muscles respond to the current as promptly upon one side as the other, but this treatment has effected no very satisfactory results.

Dr. Wilder remarked that from where he was

sitting the difficulty seemed to be upon the right side of the face.

DR. JACOBY said the same idea had occurred to him.

DR. VAN BIBBER asked if the patient ever had any previous affection of the face or ears.

DR. ZENNER replied that he had not, and that the first thing he had noticed was a slight heavy aching feeling in the left corner of the mouth, which had gradually increased. Dr. Zenner thought that the muscles of the affected side being brought so constantly into action by one continual effort might account for the condition of subjective symptoms presented. Poore, in his analysis of cases of writer's cramp speaks of the neurosis being due to a persistent activity of certain muscles where the act of prehension is brought into play; this somewhat resembles the present case in requiring greater than ordinary effort. The patient himself has never accepted the fact that his calling of sales has produced his difficulty, but rather attributes it to having taken cold while confined to his house for that month, as he was in the habit of sitting by an open window. Dr. Zenner did not dispute that there might be some other elements involved. He concluded that although he had administered the iodides, electricity, etc., that if these were pushed a little further, together with more thorough application of massage and electricity and no better results secured, it would be advisable to resort to stretching of the facial nerves of the left side.

In answer to questions Dr. Zenner replied there were no contractions in drinking unless an effort was required, and no specific history so far as he had been able to learn.

DR. L. C. GRAY inquired if he had been examined by the opthalmoscope.

DR. ZENNER stated that he had sent him to a specialist for that purpose, and there was nothing abnormal in that respect.

DR. GRAY then asked if, on examining him with galvanism, any difference was observed in the contraction of the muscles.

DR. ZENNER replied not in the orbicularis oris, to which he had specially directed his attention.

DR. LLOYD asked if the patient suffered from vertigo.

DR. ZENNER replied he did not.

THE PRESIDENT remarked that the case was one of extreme interest, and that he was inclined to regard it as a professional neurosis, and cited a case in which he had been called in consultation by Dr. C. U. Turnbull, of Philadelphia. The patient was an actor playing in the Mikado at one of the theatres; this man was compelled in his part to distort his face to a peculiar expression requiring great effort. The result of this effort was followed by double vision, which at last compelled him to seek Dr. Turnbull's advice; he was then suffering from paralysis of one of the external recti muscles. There was one peculiarity, and that was that, with an increased voluntary effort, the patient could draw the affected eye into its normal position.

DR. MILLS thought cerebral exhaustion was a factor in this condition, and stated that although this condition lasted some time, the patient had almost recovered.

Dr. Mills also thought this patient of Dr. Zenner presented appearances of secondary contractions, and that this condition was extremely difficult, if not almost impossible to alleviate. The case presented symptoms which he had observed in cases of peripheral neuritis, which had spread and involved a large part of the muscles of the face, and he thought that a slight peripheral neuritis might have been the starting point. The question was whether it was central or peripheral, and if central, whether a disease of the nuclei or the higher centres. Dr. Mills thought the line of treatment suggested by Dr. Zenner very good, rest to the parts and an endeavor to restore nutrition being most desirable; he also thought that if recovery was delayed under these conditions, stretching of the nerve should not be postponed too long, and that stretching of the facial nerve was distinctly indicated when other means failed.

DR. GRAY remarked that he had made a diagnosis of lesion of the facial nerve, and asked if there were any symptoms of aphasia.

DR. ZENNER replied that the patient had never lost the pronunciation of a word.

DR. GRAY remarked it would require a most careful examination by the electric current to form a differential diagnosis, but he had thought, while making his examination, there was a difference of power of the two sides, and that the patient was paralyzed on one side of his face; that there was a difference in the closing of the eyes, and also, when the patient closed his lips upon the speaker's fingers, there was evidently a loss of power upon the left side.

DR. ZENNER, in closing the remarks, said that he would not deny that there was or had been neuritis present, though there was no direct evidence of it, no apparent paralysis or degenerative electrical reactions. He had not pretended to say what was the exact seat or nature of the disease in this patient. In most cases of professional neuroses the nature of the disease is altogether obscure; probably there may be a different pathological basis in different cases. In a number of cases of writer's cramp neuritis appeared to be the cause. But that his own case was properly classified with professional neuroses was based upon the features peculiar to almost all such cases, first, that it seemed to have as its cause the excessive use of the affected muscles, secondly, that the peculiar symptoms were brought out, in each instance, only when those muscles were brought into play by a voluntary act.

When the patient attempts to repeat a word rapidly there is a rigid contraction of the muscles at the left angle of the mouth, pressing it firmly against the teeth, and at the same time some of the muscles on the right side contract, though much less forcibly, pulling the mouth toward the right side. The elevator muscles of the left upper lip alone take no part in the spasm, so that it appears as if there were paralysis of that side of the face, and the face is merely drawn to the other side. But the patient revealed that there was no paralysis of these muscles by exposing upper and lower teeth, by moving the mouth to one side and the other, all of which was as well done on the left side as right. The strength of the elevator muscles of the left upper lip was farther shown by the patient's holding the lip elevated while the examiner made forcible and persistent efforts to pull it down.

The speaker has repeatedly examined the patient for paresis of some of the muscles, which is often the basis of spasms of various kinds, as in cases of writer's cramp and in other kinds of spasms, but has never been able to detect any marked weakness of any of the muscles.

(To be continued.)

Medical and Surgical Journal.

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THE REPARATIVE POWER OF THE AGED.

THE attempt to give a prognosis as to the duration of life in an old person in whom there is no actual disease, but who is approaching what some one has felicitously termed physiological death, is often a difficult matter. Friends who wish to be present at the closing scene inquire whether they may safely go away for a day or a week with the expectation of finding the patient living when they return, and it often happens that the physician's best judgment as to the patient's probable capacity for holding out is sufficiently at fault to cause the friends the needless relinquishment of business or other plans, for a considerable time before the dissolution takes place.

As persons in whom the vital currents are not strong, often endure operations and confining accidents better than those in rude health, so there is sometimes in the aged a surprising resistance to exhausting influences. From childhood to age the ratio of the force-production to the needs of the economy is constantly growing less, till the surplus available for repair and growth seems well-nigh exhausted. Yet perhaps the actual demands on nutritive activity in the processes of repair are not so very great; and the condition of rest and quietness attending the diminished nerve-susceptibility of old age may be more promotive of reparatory processes than an excess of nutritive force without such quietness. It has been said that over-action is the greatest enemy to repair.

Some two years ago Dr. Humphrey, Professor of Surgery at the University of Cambridge, published the information gathered by a collective-investigative inquiry in one of the branches of the British Medical Association. In the paper containing these data the author endeavored to show that certain injuries commonly supposed to be difficult or impossible of repair in the aged, were so, not so much on account of the age of the victims as from other causes. For instance, the rare union of intracapsular fracture of the thigh, he claimed, is due to the peculiar condition of the part, to the separation of the broken surfaces, to the buried position of the inner fragment in the cavity of the acetabulum which permits the contact of the fragments as well as the formation of any uniting medium around the point of fracture, rather than to the fact of senility. The character of the fracture was compared to that of the olecranon and the patella, and it was shown that bony union takes place firmly and quickly in the aged in extra-capsular fractures, or in any others where the fragments can be kept well in contact. As to whether intracapsular fractures, which are uncommon in earlier life, do as a matter of fact heal much better than those in old age, there is apparently not much evidence attainable.

Dr. Humphrey has gathered more information on the reparative powers of the aged since his previous communication and he gives some of the results in the *British Medical Journal* for August 7. Among notable cases illustrating this point he cites the following:

"(1) James Pearson, aged 104, recovered from attacks of diarrhœa at 75 and 90, and from fractured neck of the thigh-bone at 101. In what manner the bones united cannot be determined. He goes about with crutches.

"(2) Rebecca Burn, aged 104, Dr. Whitby, of Hunstanton, relates, had injury to her hip from a fall at 96, which kept her in bed two or three months, and she quite recovered.

"(3) Fanny Covill, aged 100 and six months, whom I saw in Yorkshire, in August last, had a severe fit with loss of consciousness, for which she was bled, at 60; and, again, two fits of the same kind at 70; she quite recovered, and has had none since.

"(4) William Chappell, aged 100, had renal dropsy at 82, which lasted two years, and was cured by elaterium. He had a large slough on the thigh, from a bruise, at 99, and quite recovered.

"(5) Miss Hastings, aged 104, had acute bronchitis at 95, at 98, and 99, each time severely, had pneumonia and erysipelas of the head in her hundredth year. She recovered from all these; and, in her 104th year, had an attack (severe) of pneumonia in both lungs, which passed through its ordinary course, and, in the words of Dr. Pike, of Malvern, she threw off the disease wonderfully, and the lungs cleared up well, leaving only the chronic bronchitis, from which she had latterly suffered; but she did not again fully recover her strength.

"(6) M. L., aged 108, fractured the wrist at 104. Good callus formed, and there was complete consolidation of the fracture. (Information derived from a resident of Nantes; whether medical man not stated).

"(7) William Hodge, aged 101, had shingles at 99, and recovered.

"(8) Ann Trew, aged 101, recovered from a severe attack of bronchitis at 82.

"(9) Mrs. Pallett, aged 104, had severe fever at 84, and quite recovered.

"(10) Dr. Black, of Wimpole Street, tells me of a lady who recovered rapidly and completely from a Colles's fracture at 89, and completely from burns and scalds on the hands at 92.

"(11) Dr. Horder, of Cardiff, relates of a man, aged 92, that he has had two attacks of bronchitis and one of pneumonia in the last four years.

"(12) Dr. Campbell, of Liverpool, relates of a woman, aged 97, that she completely recovered from an attack of acute bronchitis at 95.

"(13) I was told that James Betts, aged 91, whom I saw at Norwich, had severe erysipelas of the head and face at 89, and quite recovered.

"(14) Mr. Ronaldson, of Haddington, states that a man, aged 97, had a severe attack of bronchitis at 88, resulting in complete recovery."

A clear distinction is made by Dr. Humphrey between the power in the aged of bearing up against the first impulses or initial shock of disease and that of recovering from its effects, or, as he expresses it, between the power to withstand the tidal flow of disease

and that of repair during its ebb. The depression caused by the onset of an acute malady in the aged is explained by the fact that a febrile temperature means a waste and dissipation of heat, which is exactly what old age has the greatest difficulty in maintaining. Hence the rapidity with which old people succumb to a trifling febrile attack, even a cold. But the onset having been resisted, the patient often develops remarkable reparative power, as also in the case of ulcers, wounds and fractures. Even in senile gangrene, where the nutrition of a part has been so poor that it could not keep itself alive, there is often evidence of much vital energy in the region most nearly adjacent to the separated part.

Of course when there are lesions of any portion of the nervous system, these reparative processes will not occur. Perhaps in other cases Dr. Humphrey is unduly sanguine of the resisting power of old persons, but the cases he has collected, give us warrant in hoping in the care of the aged, if we can fortify them against the first onset of an acute malady, to find in nature a strong and often unlooked for recuperative force.

FUNCTIONS OF THE THYROID GLAND.

Schiff[1] has recently published the results of numerous extirpations of the thyroid gland in animals, from which it would seem that complete thyroidectomy is not the trivial and harmless operation which it was formerly supposed to be. Maignien,[2] in 1842, published a memoir in which he pointed out what he considered as important relations between the thyroid and the intracerebral circulation, a principal office of that gland being "to compress the carotids against the vertebral column, and thus diminish the afflux of blood to the anterior parts of the encephalon," and, according to Schiff's experiments, complete and simultaneous extirpation of the two thyroids in mammals is attended with grave cerebral symptoms, and is almost invariably fatal.

Out of sixty dogs on which the operation was performed only one survived, after severe sickness, and all the others died between the fourth and twenty-seventh day of cerebral disease, the symptoms consisting "of a singular mixture of paralytic (or paretic) and irritative and convulsive phenomena." If only one thyroid was removed at a time, a considerable interval between the two operations being allowed, the symptoms were less alarming, though still grave, and the animal generally survived. The operation was performed in every case with due antiseptic precautions, and all possibility of septicæmia seems to have been excluded. Herzen has lately repeated, and with the greatest care, the experiments of Schiff, and with complete confirmation of Schiff's results. In every instance, within a limited period after the thyroidectomy, the animal was taken with rigors, convulsions, symptoms indicating hallucinations of terror, then cyanosis, coma, paralysis and death. His conclusions are as follows: "The effects of thyroidectomy really and solely depend on *absence of the thyroid*, and they are the expression of a *cerebral affection*, probably cortical."[3]

These experiments recall the paper read by Prof. Kocher, of Berne, at the Twelfth Congress of German Surgeons in 1883, on "Extirpation of Goitre and its Consequences." This paper was based upon one hundred and one cases of partial or total removal of the thyroid in man for goitre. The partial extirpations, as far as they could be followed up, were apparently followed by no unfavorable results, but of the eighteen cases of total extirpation, sixteen showed more or less considerable derangement of the general health of a distinctly progressive character, changes which eventually were highly suggestive of idiocy, cretinism and myxœdema; in the two other cases, unusual conditions were developed which may have accounted for their exceptionally favorable course.

[1] Revue Med. de la Suisse Romande, February and August, 1885.
[2] Compt. Rend. de l' Acad. des Sciences, t. xiv, p. 75.

THE SOMERVILLE POISONING SENSATION.

The recent developments in the case of Sarah A. Robinson, of West Somerville, Mass., charged with poisoning successively through a series of years seven members of her own family, the last her own son, an amiable and promising young man twenty-one years of age, indicate, if reports should be confirmed, a degree of diabolical wickedness hardly equalled since the days of Lucretia Borgia, for in this instance, the incitement to the murder of kith and kin seems to have been a cold-blooded and sordid lust for petty life-insurance moneys, and not the eager impulse of envy, hatred or jealousy. Mrs. Robinson also stands accused of other crimes of a similar nature, and we understand that arsenic in large quantities has been found in the stomach of the last of her supposed victims. She awaits her trial at East Cambridge, and if convicted on the principal charges, she will have won for herself a place in history by the side of Hieronyma Spara and the notorious Parisian poisoners of the 17th century.

Professional poisoners are apt to resort to arsenic to accomplish their purposes, and the famous Italian poison of the last century, with which the notorious Toffania is said to have caused the death of more than six hundred persons, was composed of neutral arsenical salts. The celebrated elixir of La Spara, which was secretly sold all through Europe as a sure specific for ridding husbands or wives of uncomfortable partners, and which was stated to be "a slow poison, clear, tasteless and limpid, and of strength sufficient to destroy life in the course of a day, week, month, or number of months, as the purchaser preferred," was an alkaline solution of arsenious acid.

There is also evidence that the famous "succession powder" — the secret of whose manufacture the Marquise de Brinvillers, of the 17th century obtained of

[3] Semaine Medicle, August 11th, 1886.

her lover, St. Croix, and with which she caused the tragic death of her father, her two brothers and sisters, besides hosts of other victims (according to her own confession) — was a compound of white arsenic with some inert substance. The career of the Marquise excited such terror in France that Louis XIV instituted a distinct tribunal, the *Chambre Ardente*, to investigate cases of poisoning by the "succession powder;" many persons of the first rank, such as the Maréchal de Luxembourg and the Princess Louise of Savoy, were examined on suspicion, but no one was executed except the pretended sorcerer, Voisin, in 1680, after which time there seemed to be no farther call for the "Fiery Chamber."

Moreover, that compound of less romantic associations, sold under the name of "Rough on Rats," owes its poisonous properties to arsenic, and is used not only to destroy vermin, but has frequently proved itself a too convenient tool for both suicide and murder.

MEDICAL NOTES.

— The foolhardy continue to experiment with themselves with the result of possibly throwing some light on what the human body can endure under certain severe conditions. Two men have, within a few months, gone through the whirlpool rapids at Niagara Falls, one completely enclosed in a cask built for the purpose, and another having his body below the neck similarly enclosed, but with his head left out. Last Sunday a young man made the passage with no external appliance but a life-preserver of cork buckled about his trunk. He was ten minutes in going through the rapids, and was at one time submerged for ten seconds consecutively. He reports himself to have been unconscious several times during his transit, and says that a person utterly unable to swim would stand as good a chance for his life as the most expert swimmer. He does not believe that any one could accomplish the task without the aid of a life-preserver. The only reliable life-preserver for such cases seems to be to stay ashore.

— The *New York Sun* contains the following:

Manager. "How old is your child, madam?"— *Woman.* "Eleven months, sir."—*Manager.* "Male or female?"— *Woman.* "Female."—*Manager.* "What experience has she had as an actress?"— *Woman.* "She was with Foshay's combination two months, sir, and has also played an engagement at the Madison Park Theatre."—*Manager.* "I will assign her a part in our forthcoming play, 'A Father's Crime and a Grandfather's Sin; or, the Lost Child.' First rehearsal Tuesday at 10 A. M."

That this is not altogether an "imaginary conversation" is shown by the fact stated in a newspaper interview by a dramatic star of some note, that he began his professional career in a Philadelphia theatre at the age of six weeks.

— At a recent meeting of the Central Veterinary Society of Paris, M. Nocard stated that all birds, living in contiguity with human beings, were liable to contract a bacillary tuberculosis. He had met with four poultry yards infected with tuberculosis, where the epidemic could only be accounted for in one way, and that way was contact, either direct or indirect, with persons in the last stage of phthisis. In a fifth instance of tuberculosis in a poultry-yard, the element of contagion must have existed in the excrement of tuberculous cows which was devoured by the birds. Experiments proved that inoculation or ingestion of tuberculous products taken from mammalia, rendered birds tuberculous. In tuberculosis produced by tuberculous products of animal origin, the distribution of visible lesions, and the morphology of the bacilli, are identical with those observed in cases of natural tuberculosis.

— In one of the forges of the royal gun factory at the royal arsenal, Woolwich, an appalling accident occurred while a party of men were employed in casting a great ingot of steel for the construction of an 8 6-ton gun. The mould was a cylinder standing on end in a pit of about ten feet square, and the iron floor of the pit formed the bottom of the mould. Into this was poured about eight tons of molten steel from a patent gas furnace, and the casting would have been perfect if the usual period of two hours had been allowed for its growing cool, but in about one hour after the metal had been run, a man descended into the pit to block up the mould casing preparatory to its being removed. The steel had barely set on the outside, and, as soon as the cylinder was raised from the floor, the molten metal poured out in a deluge. The man attempted to reach the ladder by which he had descended, but was caught and overwhelmed by the liquid steel. No trace of the man could be observed in the seething well, and the metal was visibly cooling on the surface, threatening to encase the remains of its victim in a solid block of steel. The men went zealously to work with iron rods and hooks and ladles, and, notwithstanding the intense heat, succeeded in extracting a shapeless mass of human cinder, which was pronounced to be a portion of the trunk. The head and limbs were not recovered but after the metal cooled some portions of them were found projecting above the surface.

Miscellany.

SALICYLATE OF COCAINE IN ASTHMA.

A COMPARATIVELY new method of treatment in asthma nervosum has lately been tried we learn from the *British Medical Journal*, July 17, by Professor Mosler, of Greifswald. It is now well known that cocaine has not only a local action on the sensory nerve-endings, but also a central one, which, at first stimulating to the nerve centres, may, if the drug be pushed, become sedative or even narcotic. By this peripheral or central effect, it may, therefore, act in

such spasmodic diseases as asthma. Early last year Beschorner published two cases of this disease which were much benefitted by cocaine. In three cases, Professor Mosler has obtained excellent results. All these cases occurred in young people of twenty-three to twenty-five years of age, and were uncomplicated by any organic heart or lung disease. The drug was given subcutaneously, in doses of 0.4 gramme, at the commencement of the attack. The first patient, who had a bad family history as regards lung disease, and in whom the asthma has lasted eleven years, was relieved after the third injection; two more doses caused abeyance of the attacks (which occurred previously every day) for a fortnight, when the patient was lost sight of. In the second and third cases, the treatment was more rapid in cutting short the attacks, which in the end were postponed for the three or four weeks during which the patients continued under observation. The injections caused, in one case, a slight sense of faintness and the appearance of dark spots before the eyes; but these symptoms soon vanished. It is, of course, impossible to draw from these cases any conclusion as to the permanent benefit of the treatment. Extended experience will perhaps show that the drug is only a palliative. It is in the hope of inducing other practitioners to try the treatment that Professor Mosler has published the results of his cases.

STATISTICS OF THE PUBLIC WARDS IN THE UNITED STATES.

THE report of Fred. H. Wines, special agent of the tenth census on the defective, dependent and delinquent classes, has been sent to the Senate, and the main points of it are given in the despatches to the daily press. The report contains a large number of interesting tables respecting the criminal and pauper classes of the United States. Among other things, it shows the total number of prisoners confined in jails, workhouses, and penitentiaries, etc., in the United States in 1880 to be 58,609, of which 53,604 were males and 5,005 females, 45,802 natives and 12,807 foreigners, 41,861 whites and 16,748 colored. The number of prisoners to each million of population is given as 1,069. In 1870 it was 853. The number of insane persons in the United States in 1880 is given as 91,959, or 1,833 for each million of population. In 1870, the total number was 37,432, or 971 for each million. Among the insane are 130 males and 138 females, who are also deaf mutes; 245 males and 282 females who are blind, and 16 males and 14 females who are deaf and dumb and blind. The number of homeless children (16 years and under) in 1880 was 57,423, of which 30,171 were males and 27,252 females; 55,613 were native born, and 18,210 of foreign birth. The number of white homeless children is given as 54,883, and that of colored as 25,040.

The number of idiots in the United States reported as receiving special training is 6,809. This idiotic class increased from 24,527 in 1876 to 76,895 in 1880. In the former year, the ratio was 636 to each million of population, and in the latter year it was 1,533. The number of the idiotic deaf mutes is: Males, 1,185; females, 937; idiotic deaf mutes and blind, males, 107; females 110; idiotic and blind, males, 661; females, 525.

The total number of blind in the United States in 1880 was 48,926, or 976 in each million of population. The number of blind reported as receiving instruction is given as 4,691. The number of blind who are also deaf mutes is: Whites, 84 males and 107 females; colored, 28 males and 29 females; blind and idiotic, whites, 595 males, 463 females; colored, 66 males, 62 females.

The number of deaf mutes in the United States in 1880, who are reported to have received special instruction in the various institutions for the deaf and dumb, is 12,154. Of any of the States, New York furnishes the largest number of this class of persons (1809), and Florida and Nevada the smallest number (six each). The Territory of Wyoming has none. The number of outdoor paupers in 1880 is given as, males, 10,290; females, 11,305; 17,902 are natives and 3,693 foreigners; 19,328 white and 2,267 colored.

The number of almshouse paupers in the United States in 1880 was: Males, 35,564; females, 30,639; of which 37,603 were white, and 5,717 colored.

THE USE AND ABUSE OF TEA.

WE make the following extracts from a leading editorial in the *British Medical Journal* (July 24), on this subject:

As might be conjectured from the nature of the physiological action of tea, the effects of its abuse fall chiefly on the nervous and digestive systems. Nervous irritability, palpitation, insomnia, and sense of brain-fatigue are among the most prominent of the neurotic symptoms; and, although it is unquestionable that these symptoms are often etiologically connected with other sources of nervous disturbance as well as tea-drinking, it is not less clear that they are greatly aggravated by the excessive use of tea. The digestive symptoms are impairment of the appetite, pain and flatulence during the process of digestion, and defective intestinal action — the symptoms, in fact, of one of the varieties of atonic dyspepsia. How far these symptoms are due to the thein contained in tea, and how far to its tannin, is a question. Sir William Roberts has shown that the most rapid infusion does not prevent the dissolving out of a large proportion of the tannin, and we are disposed to conjecture that the digestive symptoms may to a large degree be safely attributed, not to any chemical action, but to the same cause which produces the neurotic disturbance, namely, the thein.

The sufferers from excessive tea-drinking may be grouped into three classes:

First, there is the large class of pure brain-workers, who speedily discover that, while alcohol is pernicious to them, tea affords the stimulus which they desire. They indulge in it without fear of mischief, and often to an unlimited extent. Dr. Johnson's tea-drinking was proverbial, and many distinguished writers could tell a similar tale. After a time, the neurotic symptoms enumerated above begin to make their appearance, and, in many cases, do much to impair temper, and to limit the capacity for sustained intellectual effort.

Secondly, there is the large class of women of the better classes who, beginning with afternoon tea, often end by using their favorite stimulant in the intervals

between all the meals of the day, and as often as the humor takes them. The result is that appetite becomes impaired, and the prostration due to insufficient nourishment is combated with more potations of the ever welcome stimulant, until the vicious circle is well established.

Thirdly, in all our large manufacturing towns there are numbers of factory-operatives, especially women, who, finding it difficult to provide a cheap and appetizing mid-day meal, fly to the tea-pot, and do a large amount of severe physical labor on this miserable dietary. It is most important to impress upon this class, who are usually profoundly ignorant of everything concerning health and diet, that tea is not a food, and that the delusive sense of satisfaction which it bestows is a dangerous snare.

In addition to the above classes, there is a small group of persons to whom tea seems a positive poison. We know that idiosyncrasy accounts for the most extraordinary departures from the normal rule in matters of diet or the action of medicine; and the number of persons whose idiosyncrasy includes an intolerance of tea is considerable enough to make the subject worthy of professional attention.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 14, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	722	355	32.90	14.42	22.26	.42	5.24
Philadelphia	971,363	362	157	19.04	14.56	14.32	3.64	—
Brooklyn	690,000	331	177	37.20	9.30	26.10	.90	6.00
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	219	105	31.28	11.50	23.46	1.38	4.14
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	177	102	29.12	9.36	19.60	2.24	2.24
Cincinnati	325,000	148	72	33.33	13.60	13.60	4.08	9.52
New Orleans	238,000	107	31	21.39	16.74	9.30	.93	1.86
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	108	59	31.28	19.40	19.32	5.52	2.76
Pittsburgh	190,000	102	49	35.24	17.64	9 80	.98	1.96
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	34	—	70.56	19.68	48.18	2.94	8.82
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	17	8	23.52	21.76	11.76	5.88	—
Charleston	60,145	53	28	22.56	5.64	11.28	—	—
Worcester	68,383	24	17	61.40	—	53.05	8.32	—
Lowell	64,051	34	21	47.04	2.94	44.10	—	2.94
Cambridge	59,660	24	—	33.28	20.80	24.96	—	—
Fall River	56,863	—	—	—	—	—	—	—
Lynn	45,861	17	8	35.28	11.76	35.28	—	—
Lawrence	38,825	14	7	21.42	21.42	21.42	—	—
Springfield	37,577	—	—	—	—	—	—	—
New Bedford	33,393	13	10	69.21	—	11.52	7.69	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	13	5	30.76	7.69	—	15.38	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	—	—	—	—	—	—	—
Taunton	23,674	10	6	70.00	—	70.00	—	—
Haverhill	21,795	—	—	—	—	—	—	—
Gloucester	21,713	4	1	25.00	—	25.00	—	—
Brockton	20,783	7	1	14.28	28.56	14.28	—	—
Newton	19,759	11	6	54.54	18.18	54.54	—	—
Malden	16,407	6	4	33.33	—	33.33	—	—
Fitchburg	15,375	5	3	60.00	20.00	40.00	—	20.00
Waltham	14,609	6	3	16.66	16.66	—	—	16.66
Newburyport	13,716	4	1	25.00	—	25.00	—	—
Northampton	12,896	4	3	75.00	—	50.00	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,076: under five years of age 1,239: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 562, consumption 315, lung diseases 133, diarrhœal diseases 562, diphtheria and croup 96, typhoid fever 56, whooping-cough 31, measles 27, malarial fever 24, scarlet fever 21, cerebro-spinal meningitis 11, puerperal fever six, erysipelas two. From measles, New York 10, Charleston five, Baltimore three, Cincinnati, two, Philadelphia, Brooklyn, Boston, and Cambridge one each. From malarial fevers, New Orleans nine, New York six, Baltimore three, Brooklyn and District of Columbia two each, Philadelphia and Nashville one each. From scarlet fever, Pittsburg seven, New York and Brooklyn three each, Philadelphia, Cincinnati, and Providence two each, Boston and Baltimore one each. From cerebro-spinal meningitis, New York four, Pittsburgh three, Cincinnati, District of Columbia, Fitchburg, and Waltham one each. From puerperal fever, New York and Brooklyn two each, New Orleans and Providence one each. From erysipelas, New York and Brooklyn one each.

In the 19 cities and greater towns of Massachusetts, with a population of 907,642 (population of the State 1,941,465), the total death-rate for the week was 24.56 against 25.02 and 26.39 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending July 31st the death-rate was 20.6. Deaths reported 3,393; infants under one year of age 1,339; acute diseases of the respiratory organs (London) 172, diarrhœa 646, measles 83, whooping-cough 59, fever 39, scarlet fever 23, diphtheria 22.

The death-rates ranged from 11.2 in Hull to 31.0 in Leicester; Birkenhead 24.1; Birmingham 18.9; Bradford 17.6; Leeds 18.9; Liverpool 21.2; London 22.0; Manchester 21.9; Newcastle-on-Tyne 18.8; Nottingham 18.0; Sheffield 14.9.

In Edinburgh 21.3; Glasgow 20.4; Dublin 17.3.

For the week ending July 24th, in the Swiss towns, there were 25 deaths from consumption, lung diseases 10, diarrhœal diseases 18, measles three, diphtheria and croup two, whooping-cough two, typhoid fever two, small-pox one.

The death-rates were: at Zurich 5.7; Geneva 7.1; Basle 17.0; Berne 13 9.

For the week ending July 31st, in the Swiss towns, there were 36 deaths from consumption, lung diseases 21, whooping-cough six, scarlet fever two, erysipelas, typhoid fever, and puerperal fever one each.

The death-rates were: at Zurich 11.5; Geneva 9.1; Basle 28.1; Berne 21.4.

The meteorological record for week ending August 14, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Aug. 14, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, ... 8	30.106	64.7	74.9	56.3	89.0	68.6	83.0	80.0	N.E.	E.	W.	15	6	12	O.	C.	C.	—	—
Monday, ... 9	30.265	73.6	86.0	63.3	83.0	44.0	80.0	69.0	W.	W.	W.	12	10	12	C.	C.	C.	—	—
Tuesday, ..10	30.102	74.6	86.0	64.0	73.0	43.0	68.0	61.3	W.	S.W.	W.	12	17	12	C.	C.	C.	—	—
Wednes., .. 11	29.761	78.1	87.9	65.1	80.0	51.0	83.0	71.3	W.	W.	W.	12	13	9	F.	F.	C.	—	—
Thursday, 12	29.768	77.0	85.7	71.3	73.0	44.0	57.0	58.0	W.	W.	N.	12	8	4	O.	F.	F.	—	—
Friday, ...13	29.916	74.4	82.7	65.4	56.0	49.0	75.0	60.0	N.E.	S.W.	S.W.	4	13	10	C.	C.	C.	—	—
Saturday, .14	29.684	73.5	81.2	66.4	86.0	68.0	53.0	69.0	S.W.	W.	N.	8	13	12	O.	C.	C.	6	1.22
Mean, the Week.	29.943	73.7	83.3	65.3				66.9											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 14, 1886, TO AUGUST 20, 1886.

BAILEY, J. C., major and surgeon. Granted one month's leave of absence. S. O. 111, Division of the Atlantic, August 17, 1886.

STERNBERG, GEORGE M., major and surgeon. Granted leave of absence for fifteen days. S. O. 186, A. G. O., August 12, 1886.

BENTLEY, E., major and surgeon. Granted one month's leave of absence, and at its expiration to report for duty as post-surgeon at Little Rock, Ark. S. O. 113, A. G. O., Division of the Atlantic, August 18, 1886.

TREMAINE, W. S., major and surgeon. Sick leave further extended six months. S. O. 187, August 13, 1886.

LORING, L. Y., captain and assistant surgeon. Leave of absence granted him in S. O. 59, Division of the Pacific, August 2, 1886; extended two months on surgeon's certificate of disability. S. O. 189, A. G. O., August 16, 1886.

TAYLOR, B. D., captain and assistant surgeon. When relieved by Surgeon Bentley to proceed to Jackson Barracks, La., and report for duty as post-surgeon. S. O. 113, C. S. Division of the Atlantic.

HOPKINS, W. E., first lieutenant and assistant surgeon. Ordered from Fort Lowell, A. T., to Angel Island, Cal., for duty as post-surgeon. S. O. 61, Division of the Pacific, August 6, 1886.

WALES, PHIL G., lieutenant and assistant surgeon. Relieved from duty in the Department of Columbia, and to report in person at headquarters, Division of the Pacific, for further orders. S. O. 62, Division of the Pacific, August 9, 1886.

BORDEN, WM. C., lieutenant and assistant surgeon. Assigned to temporary duty at Fort Bridger, Wyo., during absence of Assistant Surgeon Crampton. S. O. 100, Department of the Platte, August 9, 1886.

MASON, CHAS. F., lieutenant and assistant surgeon. Assigned to duty as post-surgeon at Plattsburg Barracks, N. Y. S. O. 113, Division of the Atlantic, August 18, 1886.

PROMOTIONS.

To be surgeon with the rank of colonel:

MAGRUDER, DAVID L., lieutenant-colonel, July 26, 1886, vice Brown, retired.

To be surgeon with the rank of lieutenant-colonel:

ALEXANDER, CHAS. T., major, July 26, 1886, vice Magruder, promoted.

To be surgeon with the rank of major:

CRONKHITE, HENRY M., assistant surgeon, July 26, 1886, vice Alexander, promoted.

APPOINTMENTS.

To be assistant surgeon:

WALKER, FREEMAN V., of Georgia, July 27, 1886, vice Cronkhite, promoted.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING AUGUST 21, 1886.

STONE, Dr. E. P., commissioned an assistant surgeon in the Navy, August 5, 1886.

WENTWORTH, A. R., assistant surgeon. Ordered to temporary duty, Navy Yard, League Island and Pennsylvania.

LIPPINCOTT, G. C., past assistant surgeon. Ordered to Annapolis, Md., for temporary duty, member Medical Examining Board.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE WEEK ENDING AUGUST 14, 1886.

CARTER, H. R., passed assistant surgeon. Granted leave of absence for thirty days, August 12, 1886.

GLENNAN, A. H., assistant surgeon. Granted leave of absence for thirty days, August 9, 1886. To examination for promotion, August 12, 1886.

BETTUS, W. J., assistant surgeon. When relieved at Savannah, Ga., to rejoin station, New Orleans, August 13, 1886.

IN MEMORY OF FRANK HASTINGS HAMILTON.

At the meeting of the Chicago Medical Society, held August 16, 1886, the annexed preambles and resolutions were unanimously adopted:

Whereas, This Society has learned with deep regret of the death of Dr. Frank Hastings Hamilton, of New York, and,

Whereas, In his death the United States has lost one of its most distinguished surgeons, one of its ablest teachers, one of the purest patriots, and in his private life, one of the most amiable men.

Therefore, be it resolved by this Society, that we hereby give public testimonial to the many virtues of the deceased, and that we tender his family the assurance of the profound sympathy of this Society with them in the hour of their affliction, and that an *engrossed* copy of these resolutions be furnished them, and a copy spread upon the records.

BOOKS AND PAMPHLETS RECEIVED.

Twenty-Seventh Annual Announcement and Catalogue of the Hahnemann Medical College and Hospital of Chicago, Ill., 1886–87.

Fifth Annual Announcement and Catalogue of the Womans' Medical College of Baltimore. For the Session 1886–87. With an alphabetical list of all the graduates of the college. Baltimore, 1886.

Erysipelas and other Septic and Infectious Diseases Incident to Injuries and Surgical Operations prevented by a Method of Atmospheric Purification (Second Presentation.) With an Original and New Wood-cut, and with a Report of Cases of Laparotomy. By David Prince, M.D., of Jacksonville, Ill. Second Edition. (From the American Practitioner and News for April 3d and 17th, 1886.)

Annual Announcement of the Buffalo College of Pharmacy. Department of Pharmacy, University of Buffalo. For the Session of 1886–87.

Arabic and Hebrew in Anatomy. By F. B. Stephenson, M. D., United States Navy. (Reprinted from New York Medical Journal for July 24, 1886.)

Fifth Annual Report of the State Board of Health of the State of New Hampshire: For the Fiscal Year ending April 30, 1886. Manchester: John B. Clarke, Public Printer. 1886.

Original Articles.

AN EPIDEMIC OF MALARIA IN EASTERN MASSACHUSETTS.[1]

BY ZABDIEL B. ADAMS, M.D., OF FRAMINGHAM.

Of the various theories of the nature of the disease, that of Professor Cantani, of Naples, seems the most complete, if not the most satisfactory, of any. It is, that "the malarial infection depends upon a parasite (once supposed to belong to the family of algæ.) Tomasso Crudeli, Klebs, and especially Marchiafava,[2] claim to have demonstrated the existence of a malarial microbe. It enters into the blood probably more readily by way of the digestive tract than by the respiratory organs. Unquestionably water is the surest vehicle of the infection, and drinking-water is the source from which arise the worst forms of the malady. No other mode of introduction gives such severe infection. It is quite uncertain if it ever enters by the air alone."

However it may enter the blood, the micro-organism finds its way to the spleen, which, under the stimulus of its presence, undergoes a disturbance of its nutrition and becomes enlarged.

In a person with normal spleen and healthy elastic capsule, the germs, entering this organ and multiplying in it, stimulate it until its contractile elements excited to action expel the blood into the general circulation, carrying with its stream the microbes which have collected. The reaction of the organism under the excitement of the presence of this ferment in the blood, produces chill, fever, and sweating. With the fever the germs are destroyed or are eliminated, and thus the access is ended. Then there is a pause, during which the germs may rapidly multiply and again excite the spleen to contract, or there is a stage of relaxation and rest, while the multiplication of the germs goes on until the exhausted spleen recovers its contracility again, and we have another expulsion of its contained blood, and another access of fever.

If the spleen is healthy and capsule elastic, this may be repeated every day, the power of contraction being quickly restored; or with a less degree of sensibility we may have an interval of forty-eight or seventy-two hours.

It follows that the more perfect the sensibility of the spleen the shorter the intervals of rest; and in the quartan form, which is the most obstinate and rebellious, the stimuli become more powerful in their phlogogenic elements.

Thus the enlargement of the spleen in the chronic form of malaria is explained. In this form certain stimuli which act upon the liver may awaken the torpid contractile elements of the spleen, and produce fever. Thus, in those suffering with chronic enlargements, mountain air may cause an access. Certain errors in diet may do the same, especially the abuse of certain fruits; and it is suggested in this connection that some vegetables that ripen upon the ground, such as melons, may give rise to malaria by introducing the germs directly into the intestinal tract. The fever is perhaps the reaction of the body against an enemy which threatens life. An access of fever is fatal, as is well known, to many of the micro-organisms (witness the spirilli of recurrent fever). The fever is in this view a beneficient act of nature.[3] This is the theory of Prof. Cantani.

All the phenomena of the attack point distinctly to a nervous origin. A man in apparent health suddenly has a chill. His fingers and toes turn blue and cold, and shrink as if parboiled. The whole surface has a dusky hue. He complains of headache, is sick at his stomach, and perhaps vomits. He cannot sustain himself, and lies down. Suddenly he is convulsed with a shudder so profound as to shake the bed, the room, and the whole house. The external application of heat gives no relief. While the surface is chilled the internal parts become hot. This goes on for an hour, two hours, perhaps longer. Here is every indication of vaso-motor disturbance or irritation, resulting in driving the current of blood upon the internal organs. Then follows a burning fever. The temperature mounts. The face becomes flushed, headache more violent, thirst intense, and great restlessness. The theory is pretty generally accepted that *fever* is due to some irritation of the nerve centres of heat in the medulla or in the spinal cord. Dr. W. M. Ord, in an address before the London Medical Society last year, gave a striking and ingenious explanation of the origin of pyrexia. In the process of growth, he says, heat disappears. This Dr. Ord demonstrated to his own satisfaction in a growing cucumber. Whenever the constructive processes are arrested or disturbed, heat is set free. In the destructive changes in the body it is known that heat is generated. Fever follows, therefore, whenever nervous force enters to disturb or interfere with the *constructive*, and also to increase the *destructive*, metabolic processes. The sweating stage must be dependent upon the same cause as the preceding chill and fever.

But the intermission, the sudden and complete cessation of all symptoms, almost compels the conclusion that the phenomena are of nervous origin.

Then with regard to the spleen. Experiments by vivisection have shown that the spleen is capable of undergoing great modifications in size by irritants applied to the medulla.[4]

Paralyzing, or inhibiting, the splanchnic nerves caused the spleen to dilate. The volume of the spleen, of course, corresponds to the amount of blood it contains. The malarial infection may, either directly, or by acting as a ferment in the blood supplied to the part, or by stimulation even of the peripheral extremities of nerves, so irritate the medulla as to cause the spleen to dilate by reason of inhibition or paralysis of its nerves. The paralysis ceases and the spleen resumes its normal size, expelling the excess of blood.

This view does not, perhaps, differ irreconcilably from that of Prof. Cantani, as given above.

The modern views of the origin of disease, and especially the germ theory, compel us to recast our ideas of the etiology of intermittent fever.

Until a comparatively recent date it was considered, in spite of much contradictory evidence and some vague theories, that the origin of malaria in any locality was sufficiently explained, if heat, moisture, and vegetable decay, were present and active at the same time.

Now, however, there are found writers on the sub-

[1] Concluded from page 176.

[2] Prof. Cantani, by thus discriminating, would imply that the claim of Crudeli and Klebs are no longer urged. Vide page 22.

[3] Medical Clinic, Hospital Gesu e Maria Monthly Supplement, Gazetta degli Ospitali, Naples, June, 1885.

[4] Ziemssen's Cyclop., vol. viii. p. 364.

ject who do not hesitate to deny any and all agency of these factors in the production of intermittents.

The worst possible sanitary conditions cannot produce an epidemic of small-pox, nor can

> "All the infections that the sun sucks up
> From frogs, fens, flats," ——

generate a single case of intermittent fever; but the germs of these diseases being present, who will deny that the small-pox flourishes best in badly-ventilated houses and where people are filthy, or that malaria will show itself in greatest intensity in the vicinity of swamps and stagnant water.

The study of bacteriology is still in its infancy. The method of investigation seems thus far to have followed only one direction. The cultures are made under conditions similar to those which exist within the animal economy, the germs being developed and studied under the microscope in connection with organic substances, generally animal, acting with heat and moisture.

But is it not clear that there must be modes of being, and probably stages of development, apart from the living animal body, and not dependent upon its blood-globules or albuminoids? Here is a part of the natural history of the microbe which requires notice. Unless we are willing to admit that they may be bred autochthonously, we cannot escape the conclusion that the germs are in existence during the epidemic intervals. Some, it is true, may continue their growth in other organisms, animal or vegetable; but it is a matter of belief that some survive in the graves of the dead, some exist in wearing apparel, or houses, some in dust, and some again in water or floating in the atmosphere.

What causes the microbe to develop into activity at the time of epidemics is a curious and important question. All of them doubtless obey a law of *periodicity*. There is a time of rest when the germ or spore remains neutral and harmless, and again, the conditions being favorable, it develops into virulence. There is, however, in the human organism at the epidemic period some unknown receptivity awakened, when, probably by the law of natural selection, the germ received into the body produces the disease. But must we not admit also this *active state of the germ* at the time of epidemic outbreak?

If those views are correct, two agencies combine to cause an epidemic: first, the presence of germs in a state of active growth, and secondly, a condition of the human body which determines the natural selection. It is probable that neither of these could produce the effect alone, but that both must act together. Hence the statement that zymotic diseases are maintained and spread solely by the contagious principle or germ, and "*that there are no other causes in operation*," requires modification, since, besides a state of the body rendering it receptive, some condition, possibly telluric, must exist which awakes the morbific power of the free microbe.

With regard to the germ of malaria we may infer that we know something of its natural history in its free state, and apart from the pathological phonomena which it gives rise to. First, it is bred into activity by heat, vegetable decay, and moisture, in conjunction, probably, with light and air, and thus resembles organic life in general. Then it has weight and size, since it falls to the ground, is blown about by the wind, and arrested by obstacles. It requires stagnant water for its growth; it cannot live in running streams, nor in large bodies of moving water. It is destroyed by drainage and cultivation of the soil, and is stifled or rendered inert by being covered in as in buildings, and per contra it is liberated by opening up the ground. It is carried to and fro by fog and mist, and very likely by clouds and rain. These facts are not beyond question, but they are attested by countless observers in all countries.

On the other hand we know very little about the history of other disease germs except in cultures. And what do we learn from these? The distinction somewhat insisted upon by bacteriologists between saprophytic and pathogenic germs is not important in this connection, the object being to determine how these things develop when removed from all influence of organic fluids or solids. Equally useless to this investigation are efforts like those of Vogel to harmonize the processes of disease with those of fermentation by artificial methods.

Pleomorphism is the rule, and distinct morphological characters do not indicate necessarily specific differences, which are to be sought in the whole life-history of the microbe. Dr. J. S. Billings says, "as we cultivate bacteria in different media we find a change in their form. It is possible that they may gradually change by alteration of the medium, of its chemical composition, or of its temperature." In artificial cultures in twenty-four hours the cocci are seen to have become rods, in forty-eight hours cocci-chains, in fourteen days zoogloea. Cocci transplanted again become rods. From the fusion of two cells arise, in another case, a host of potential cells each having all the powers of original cells, which powers seem to reside in the nucleus, — "this cell nucleus possessing inherent properties which make it the one essential constituent of the cell itself."

We may assume, without much fear of contradiction, that the free germ or spore or nucleus (as the case may be) exists for an indefinite period in a dry, or at least an inert, state. Further than that we believe that some are made active by contact with filth, some by moisture, others again by heat, or by all of these combined. But beyond this we must wait for the investigations of those who are making this subject a special study. Dr. E. W. Cushing[5] has found that the balcillus tuberculosis cannot live in cultures at a temperature below 85° F. And yet there must be some mode or state of being of these organisms apart from the living animal body.

Looked at in this light may we not conclude that the malarial germ in its free state is more highly organized than other microbes? In a general way the statement may be hazarded that the malarial germ does not require the agency of the animal body for its development, whereas we can scarcely point to a fact in the natural history of other microbes proving their free and independent existence.

The pathological phenomena also indicate important distinctions between malarial germs and those of the zymoses, especially. In the first place malaria never, it is believed, acts by infection or contagion. The germ escapes from the body in an inert or harmless state. While it is the rule in zymotic diseases that the germ acquires increased virulence by residence within the body (at least until the "epidemic

[5] And others.

constitution," as it is called, has been exhausted), the malarial microbe, like the Giant Antæus, born of Neptune and of the Earth, expires, if its strength be not renewed by a return to the water and to the soil. Malaria, therefore, thrives in the open country, while zymotic diseases spread chiefly in cities.

Another frequent rule is that the receptivity of the body, its power of natural selection is destroyed or diminished by the agency of the germ, a first attack preventing a second. Not only is this not true of intermittent fever or malaria, but it may be doubted if natural selection plays a very important rôle in the etiology of its epidemics, unless the fact of a periodicity in all diseases appearing before an outbreak of malaria be cited in proof of this.

Why malaria spares the colored races which are so especially prone to attacks of infectious and contagious diseases, is a question which awaits further inquiry.[6]

In 1849, Professor J. K. Mitchell, of Philadelphia, in a paper "on the cryptogamous origin of malarious and epidemic fevers," suggested a direction for the study of the etiology similar to that intended in this paper. His theory was admitted to be in harmony with the fact, but was never sustained by actual demonstration.

In 1866, it will be remembered that Dr. J. N. Salisbury declared that he had discovered the origin of malaria in the minute spores of certain species of palmellæ, which he found in great numbers in the saliva of those suffering from intermittent fever, and also in or upon marsh mud recently dried.

Others have followed in the same track without greater success. The spores or ovules of various cryptogamous organisms have been suspected. In all cases, however, it could be shown that these minute plants throve abundantly in non-malarious regions, and indeed wherever light and moisture were present. These plants cannot therefore furnish the germ, or essential factor, for which search is to be made.

What of the contagion vivum? Prof. Marchiafava and Dr. Celli claim to have discovered in the interior of the red corpuscles of the blood, in those suffering from malarial fever, minute organisms having amœboid movements, and which can be distinctly stained. These they term pla-modes of malaria. They are capable of transformation, by a process of fission, into granules not possessing motion. As infection progresses these bodies multiply, and are accompanied by an accumulation of pigment. The exhibition of quinine causes them to disappear or deprives them of all motion. They diminish as infection ceases. The intravenus injection of malarial blood will cause them to appear and multiply in the blood of the recipient. They are regarded as of a parasitic nature, and as belonging to the simplest class of protozoa. "As yet their pure culture outside of the body has not been effected, nor their natural source discovered." (*Bos. Med. and Surg. Jour.*)

The effect has been made in this paper, while covering the ground of what is believed to be known with regard to the malarial infection, to draw as near as possible to the borders of its "boggy Syrtis," and by the aid of the germ theory to throw light into the fog and mists which now shroud it from view.

[6] That an acquired melanosis of malarial origin, or that the protection against insect bites afforded by a dark skin, should be accepted as a sufficient explanation of the exemption of the colored races from malaria, seems to the writer to be not consistent with the facts, and not sustained by authority.

It may not be too much to claim, in conclusion—*First*, that water is almost certain to prove to be its habitat, and the vehicle by which this microbe enters the human organism; *Second*, that by new methods of investigation its life-history may be studied; and *Third*, these two points being gained, that it is possible to attack the free germ, or prevent its admission to the body and thus the disease may be checked.

In the future undoubtedly new devices will be employed for the prevention of epidemic diseases. Thus far the only effectual method has been that introduced by Jenner and vaccination, namely, the exhaustion of the "epidemic constitution" in the human being. In most of the zymoses this factor is first in importance. But to prevent the development of epidemic virulence in the free microbe is probably in certain diseases of equal, if not of greater, necessity. In malaria, for example, may not this parasite be found and destroyed in its dormant, chrysalid, or nascent, state? May it not be sought and studied in water better than in the animal fluids? And, if this be admitted, there seems no clear and sufficient reason why our other senses, smell, taste, perhaps touch, aided by chemistry, it may be, or possibly electricity or mechanical means, should not, in this simple element, help us in accomplishing that which, in the case of bacteria and bacilli, is only possible to the organ of sight assisted by the microscope.

ABDOMINAL CELLULITIS.[1]

BY JULIAN A. MEAD, M.D., OF WATERTOWN.

The term abdominal cellulitis does not appear in the index of any medical work that I have consulted; and its analogue, pelvic cellulitis, is fast yielding to the influence of the modern analytical tendency, which divides and sub-divides each subject until the broad and distinguishing characteristics of the whole are overshadowed by the peculiarities of the part.

Without the least desire to call in question the great gain that this classification has conferred upon our profession, it has seemed to me that something perhaps may be learned by imitating the microscopist, who, by occasionally substituting the lower power for the high, obtains a more comprehensive, if less minute, idea of the nature of the pathological condition under examination.

The abdominal cavity contains a large amount of what is known as cellular or areolar tissue. It surrounds and supports the various organs, and is distributed so universally throughout the abdominal cavity, that it is necessarily concerned in most inflammations, and is the seat of the chief changes that result.

The areolar tissue consists of loosely-interlaced bundles of two forms of fibrous tissue, the white and yellow, with flattened connective tissue corpuscles adherent to them, together with a great quantity of capillary vessels, nerves, and lymphatics, and, in most places, fat.

According to Gray, the chief use of the cellular tissue is to bind parts together; while, by the laxity of the fibres and the permeability of its areolæ, it allows them to move on each other, and affords a ready exit for inflammatory and other effused fluids.

This tissue, when inflamed, whether in the abdomen

[1] Read at the Annual Meeting of the Massachusetts Medical Society, June 8, 1886, and recommended for publication by the Society.

or elsewhere, undergoes important changes. The essential changes that take place in inflammation have been satisfactorily demonstrated; the difference in the symptoms depends largely on the seat and intensity of the inflammation, and their variability is not a valid argument against the unity of the process.

The credit of the modern explanation of inflammation belongs to Cohnheim; it matters not whether or no we admit that a proliferation of the fixed corpuscles takes place, as is held by Virchow, Von Becklinhamen, and Stricher; the only satisfactory explanation of the phenomenon of inflammation is that afforded by Cohnheim's theory. As observed and stated by Cohnheim, the changes in an inflamed tissue are as follows: The vessels, in the order of artery, capillary and vein, at once begin to increase in size, the velocity of the blood, at first quickened, gradually diminishes, and the white corpuscles range themselves along the walls of the veins, where they move slowly along, tumbling over each other until they become stationary. On the outer contour of the walls of a vessel, usually a vein, in which the marginal layers of white corpuscles are well developed, is seen a small projection, which enlarges in length and breadth, and becomes a rounded, colorless lump. This again enlarges, puts out new pointed projections, and gradually withdraws itself from the wall of the vessel until it is attached to it only by a long, narrow stem. Finally this attachment is broken, and we see a colorless, contractile body, with one long and several shorter processes, with one or several nuclei, in fact, a white corpuscle. The white corpuscle in this way passes out of the vessel and becomes a foreign body. The number of corpuscles that pass through a vein in a certain time depends upon the intensity of the inflammation; when, however, the inflammation is fairly acute, six to eight hours suffice to completely surround the veins and capillaries. Red corpuscles also pass through the walls of the veins and capillaries, but neither white nor red pass through the walls of the arteries. The liquor sanguinis soon follows, and the surrounding tissue is soon drenched with it.

The cardinal symptoms of inflammation, heat, pain, redness, and swelling are readily understood and explained, if we bear in mind the above-mentioned minute changes that take place in the vessels. The swelling, heat, and redness are the direct result of the effused corpuscles and liquor sanguinis. The pain is caused by injury to, or pressure of the nerves. The fifth symptom, impairment of function, is accounted for by the size of the exudation, and the lack of the usual nourishment.

Such an inflammation of the cellular tissue cannot occur without causing injury, the extent of which is proportional to the nature of the cause of the inflammation, and the degree to which its harmful influence is felt.

Inflammation ends in resolution, production, or destruction. By resolution is meant complete absorption of the exudation, and restoration of the integrity of the affected part. This process begins as soon as the walls of the bloodvessels are restored to their normal condition. If the inflammation is mild, and the injury of the bloodvessels trivial, the cellular tissue is quickly relieved of the exudation, which is taken up, partly by the lymph-vessels and partly by the bloodvessels. Should the inflammation be more intense and cause considerable exudation, and a slight destruction of the tissue, the process of resolution is more complicated; the fluid part of the exudation and the cells are absorbed as before, but the solid part of the exudation must become softened and liquefied before the lymph and bloodvessels can take it away. This dead tissue, removed by the vessels, is, if not large in amount, replaced by a new and similar growth. Sometimes, indeed, the amount of this regenerative growth exceeds the original loss, and causes a hyperplasia of the diseased tissue.

Inflammation ends in production when the process is more intense than that which results in resolution, but not sufficiently intense to induce the formation of pus, and also when the circulation in the bloodvessel is not materially impaired. According to Ziegler, the cells that form this new productive tissue, granulation or cicatricial, are the same white corpuscles that have passed out of the vessels.

The essential part of the formation of this new tissue is the existence of new bloodvessels, without which the tissue would not be produced or sufficiently nourished. Unfortunately, all inflammations do not run the favorable course above described. Instead of resolution and production, there may be destruction. This happens when the nutrition of the inflamed tissue is cut off by the stoppage of the vessels on which the tissue depends for its support. The more abundant and more cellular the exudation, the more likely is the inflammation to end in destruction. Billroth says, as the inflammation progresses, the entire inflamed part is finally changed to pus, that is, to fluid tissue, consisting of cells with some serous intercellular fluid, which is mixed with shreds of dead tissue. The tissue surrounding the purulent collection is filled with cells, and is very vascular; anatomically, it closely resembles a granulating surface lining the whole cavity.

If the exudation softens and becomes liquid rapidly, it forms an acute abscess; if slowly, a cold abscess. The course of inflammation has been described somewhat in detail, because it will assist to a more intelligent understanding of the nature of the inflammatory process that takes place in the cellular tissue of the abdominal cavity. This pathological change is practically the same, whether the seat of the disease be near the cæcum or kidney, in the abdominal wall, or in the fascia behind the peritoneum. Its course and its results may be, and undoubtedly are influenced by the surroundings, but the inflammation goes steadily on to resolution, production, or destruction, with the formation of pus.

As in diseases of the kidney it is not uncommon to find one type complicated by another, and the most important symptoms obscured by the prominence of the complication, so we shall find that an inflammatory process of the cellular tissue does not in every case run a typical course. The symptoms will show that complications exist which, while they do not change the nature of the disease, modify its course and influence its manifestations.

It is generally admitted that an abscess which originates in the abdominal wall, in the sub-peritoneal cellular tissue or in the region of the loins, and is totally unconnected with disease of bone, or with ulceration of the bowels or with child-birth, is not a very common occurrence.

Dr. Gurdon Buck says that suppuration may take place in the iliac fossa behind its fascia, unconnected with caries of the lumbar vertebræ or pelvis or morbid lesion of the cæcum or colon. The same writer describes the true postfascial abscess originating in the

iliac fossa from idiopathic inflammation of the cellular tissue, as follows: It represents itself in a chronic, more rarely in an acute, form, and locates itself in either the right or left iliac region. It is most frequent in adult age. The tumor which it forms rises up from the hollow of the ilium, pushing before it the fascia and outer half of Poupart's ligament so that the crest of the ilium and the anterior superior spinous process can no longer be grasped between the thumb and finger. The outer half of Poupart's ligament, is rendered tense and unyielding, and a deep seated induration may extend two or three fingers' breadth below it. The precise limits of the swelling can only be appreciated by the touch and by percussion over its abdominal portion; upon the surface, the eye perceives only a fulness or a diffuse swelling of those parts.

Of seven cases, in only one was fluctuation unequivocal. In all except one the thigh was retracted and attempts to straighten it caused pain.

The phlegmonous character of the swelling, its anatomical relation to the iliac fossa and Poupart's ligament, the absence of disease of the lumbar vertebræ and the co-existing retraction of the thigh, these points being clearly made out, are sufficient to warrant the conclusion that suppuration has taken place in the fossa behind the fascia.

Oppolzer divided the inflammatory process in the region of the cæcum into perityphlitis and paratyphlitis, the former being limited to the peritoneal envelop of the cæcum and appedix vermiformis, and the latter to the post-peritoneal and post-cæcal connective tissue. This is a refinement in diagnosis that is not warranted by actual experience. A preponderance of certain symptoms, namely, the pressure symptom in the right lower extremity; the flexed thigh; formication, numbness, pain, and sometimes paresis of the right leg; dysuria, and retraction of the testicle, and pressure upon the iliac vein inducing trombosis, show that the tissue behind the cæcum has become affected, but these symptoms do not limit the disease to this locality. In a majority of cases the peritoneal covering of the cæcum and the vermiform appendix participates in the inflammation. An English writer says that there is reason to believe that this malady is often passed over unrecognized, and is of more frequent occurrence than is supposed. This is said to be the case in children, in whom cases of iliac abscess around the cæcum are liable to be mistaken for hip-joint disease, though with perhaps scarcely sufficient reason.

This disease is generally secondary to some affection of the cæcum, but also arises from perinephritic and psoas abscess, vertebral caries, septicæmia, and external injuries such as blows, kicks, or severe compression.

In the admirable "Letters to a Young Physician," by Dr. James Jackson, mention is made of a painful tumor near the cæcum. Dr. Jackson located the pain and tumor on a horizontal line connecting the two anterior superior spinous processes of the ilium at the point where this line intersects the right margin of the rectus muscle on the right side. This tumor is felt on deep percussion. Sometimes it is superficial. Marked tenderness on pressure exists within a circumscribed space over the tumor. According to Virchow, the tumor may be as large as a man's fist, but as a rule it is much smaller. Dr. Jackson frankly admits his inability to form an opinion as to the precise seat and nature of this affection. It is clear, however, that he described what is known as perityphlitis, that is an inflammation of the connective tissue around and behind the cæcum; the accuracy of his localization and description is borne out by modern research.

The nature of this affection has been described in the beginning of this paper, and an intelligent explanation given of the swelling, pain and nervous symptoms. The gradual disappearance of the tumor in one case, and the formation of an abscess in another, was accounted for. The same treatment, namely, rest, poultices, opium, and an early opening of the abscess, that has been found beneficial in inflammations in other localities, is indicated here for the same reason. Opium and incision of the abscess should be resorted to early, on account of the danger of rupture into the peritoneal cavity. The value of opening these abscesses is shown by contrasting the sixty-seven cases, mostly treated without incision, with a mortality of forty-seven and a half per cent., reported by Bull, of New York, in 1872, with the one hundred cases treated by operation, with a mortality of only fifteen per cent., reported by Noyes, of Providence, in 1883.

Another favorite seat for abdominal cellulitis is the loose connective tissue around and behind the kidneys. This affection has received the name, from its location, perinephritis. The inflammatory process generally begins in the connective tissue behind the kidney. Perinephritis, like perityphlitis, is generally secondary, but it may be primary.

In the earlier stage the cellular tissue behind the kidney is suggested; later, as a result of the exudation of the white corpuscles and liquor sanguinis, it becomes solid and firm. This congestion causes from the first pain and tenderness. When exudation has taken place, a hard tumor appears in the lumbar region which, if the inflammatory process continues, becomes soft and fluctuating in the middle, and generally more distinct and superficial.

The inflammatory process may stop short of the formation of pus, and the swelling may gradually disappear. The inflammation is then said to have terminated in resolution. Trousseau in his Clinical Medicine mentions several cases that resulted in this way. If the inflammation goes on to suppuration the tumor should be explored, and the pus, when demonstrated, should be at once removed. An early incision is desirable, as it may anticipate an unfavorable burrowing or pointing of the abscess.

Local inflammation of the cellular tissue may occur in the abdominal walls unconnected with disease within the cavity, and may terminate in suppuration. Such abscesses are generally the result of an injury, and are usually found near the umbilicus. The absence of urgent symptoms referable to the abdomen will distinguish these abscesses from the peritoneal abscess. An effort on the part of the patient that makes the recti muscles tense, such as raising the trunk or forced expiration, will protrude the superficial and obscure the deeper tumor. These abscesses require but little treatment, and the prognosis is generally good. In case they are connected with and dependent upon some intestinal trouble, the progress and treatment depends on the extent and nature of the intestinal disease. Dr. Howell, of England, reported a case of a man with a small, hard tumor, about the size of a hen's egg, lying over Poupart's ligament, about midway between the external and

internal abdominal rings. After two days the tumor began to soften, and an incision was made and four ounces of pus were discharged. On the following morning two worms were found in the poultice. Fæces passed by the wound for three weeks. The man recovered within two months. After confinement it is not uncommon to find an extra-peritoneal abscess in the inguinal region. To quote Dr. Coale, its most frequent seat is where the aponeurotic covering of the deep abdominal muscles going to the thigh passes into the fascia transversalis and Pourpart's ligament. Examination by the rectum and vagina rarely affords any information. In course of time the abscess extends upwards towards the inguinal region, where its presence soon becomes manifest. Here, as in other cases of abscess, an incision should be made as soon as its situation is obtained, and the pus removed.

The foregoing are some of the favorite seats of abdominal cellulitis. The experience of the members of this Society will prove that the list has not been exhausted. Perhaps some of those tumors of the abdomen whose character is obscure, and which do not belong to the so-called phantom tumors, nor to that class that disappear after a good cathartic, may be examples of inflammation of the cellular tissue of the abdominal cavity. It is certain *a priori* that a tumor may appear wherever there is cellular tissue, and an exciting cause for inflammation, and that, while the physician, somewhat in doubt as to the nature of the swelling, postpones aspirating, it may by the process known as resolution, gradually disappear. Such a tumor, when the result of chronic inflammation, might simulate a malignant growth, and suggest a prognosis entirely unwarranted by the nature of the case and its subsequent course. If the pathological condition is recognized, and the changes in the inflamed tissue understood, the prognosis becomes more certain, and the treatment more effective. Should the tumor tend to resolution, general treatment, together with morphia to relieve pain, and poultices to assist the resolution, will suffice. But when pus is suspected or actually demonstrated, an effort should be made at once to remove it, either by aspiration or incision.

The object sought in the preparation of this paper has been to call attention to the frequency of abdominal cellulitis; in short, the unity of its course in different parts of the abdomen; to suggest the possibility of mistaking for other diseases; to explain the nature of the disease, and to point out the necessity of an early evacuation of the pus.

— A correspondent of the *Medical Brief* states that Mr. Savory, President of the Royal College of Surgeons, was recently going round his wards at St. Bartholomew's Hospital, when he came to a case of hernia just operated upon. Turning to one of the students following him, he asked: "You have passed, have you not?" An affirmative answer was returned. "What is a good thing after an operation for hernia?" "A dose of opium." "How much would you give?" "Ten grains." "How would you give it?" "The liquid extract." How much of it would you require to give you ten grains of opium?" "Half a drachm." "They will not be long before they require an extra coroner in the district where you settle down," was his comment.

BACKWARD DISLOCATION OF THE FINGERS UPON THE METACARPUS.[1]

BY E. O. OTIS, M.D., OF BOSTON.

Two cases of backward dislocation of the index finger upon the metacarpal bone give me the text of my subject. One refused to allow a proper attempt at reduction on account of the pain, was unwilling to take ether, and can be speedily dismissed.

The other, a student, was practising jumping for an athletic tournament, and fell upon his hand, with fingers extended. He and his companions noticed at once the deformity, and tried to pull the finger into place. Failing in this, he appeared with his friends at my office. I attempted, by the "Crosby Method" — to be described later, and which was first brought to my notice several years ago by Dr. William Ingalls — to reduce it. Not succeeding, I gave him ether and renewed my attempts, but unsuccessfully. I then rested a while, long enough to have made a Levis's apparatus, which, when applied, gives one an artificially lengthened finger by which greater force can be used in extension. Then, again administering ether, I made a careful and prolonged attempt to reduce the luxation. Several times I thought this was accomplished, but the joint, being left to itself, the dislocation always recurred. Finally, I desisted, and allowed the boy to come out of ether. I then told him that the only thing to be done was an operation; an incision of some ligament or ligaments, having a very vague idea myself of exactly what was to be done. His home being not far distant, I advised him to see his parents and family physician and explain to them what I desired to do, and obtain their consent. He went home, and I did not see him again for some weeks. His finger then did not seem to be in place, nor had it regained its original freedom of motion, although he told me his family physician had performed some sort of an operation. This is the last I saw of him, and the ultimate result I do not know. The case, however, left a very vivid impression upon my mind of the possible difficulties in the reduction of a dislocated finger, quite different from that one would obtain from Keetley's single sentence upon the subject: "Dislocation of fingers," he says, "are not common, and may be reduced by extension."

Since, as Billroth says in discussing dislocations, "Everything depends on correct anatomical knowledge," I shall first consider the *Anatomy of the Metacarpo-phalangeal* joint, next the *pathology* of the injury, and finally, the *treatment*, based upon the previous considerations. I shall, moreover, refer often to dislocations of the thumb in considering those of the fingers, for the two injuries are anatomically and pathologically in many respects quite alike. I shall make frequent reference to Jalaguier's recent and admirable article on the subject in the *Archives Générales de Médecine* for February, 1886.

The metacarpo-phalangeal joint is an enarthrodial one (Tillaux), characterized by the reception of a head into a cavity, the cavity being much smaller than the head which it contains. The size of the cavity, however, is much increased by the anterior or glenoid (Cruveilhier) ligament. This ligament is thick, dense and fibro-cartilaginous in texture; placed on the palmar surface of the joint, inseparably connected with

[1] Read at the meeting of the Boston Society for Medical Observation, May 3d, 1886.

the phalanx where it is thick and strong, but only loosely united to the neck of the metacarpal bone where it is thin and delicate (x Fig. I. Schüller.)



Fig. I.

The glenoid ligaments of the index and middle fingers sometimes contain a sesamoid bone. Constantly, in the index finger, according to M.M. Jalaguier and Polaillon, while two always exist in that of the thumb. There are two powerful lateral ligaments united one with another by the glenoid, and forming thus a continuous band from side to side. The glenoid ligaments are connected one with another by the transverse ligament of the metacarpal bone, which is a narrow fibrous band. The extensor tendon takes the place of a dorsal or posterior ligament according to Gray. Kelly,[2] however, says, with reference to the thumb, that the posterior ligament is a strong, independent structure, perfectly distinct from the dorsal tendons and their expansions, from which it is separated by a bursa.

The mechanism of flexion and extension is as follows, after Jalaguier: In flexion the phalanx glides over the head of the metacarpal bone through an arc of ninety degrees. The glenoid ligament is relaxed as well as the fibres of the lateral ligaments which are attached to its sides, while the phalangeal part of the latter ligaments, on the contrary, is put upon the stretch, and limits the movement of flexion.

In extension the phalanx glides from before backwards upon the head of the metacarpal bone, which, in extreme extension, almost entirely corresponds to the glenoid ligament, which becomes more and more stretched along with the glenoid fibres of the lateral ligaments. The tendon of the flexors and transverse ligament also contribute to limit extension.

If now extension is exaggerated violently, a rupture is produced at the weakest point, which is at the metacarpal attachment of the glenoid ligament (x Fig. I). In a hundred trials upon the corresponding joint in the thumb, M. Farabeuf found that the phalangeal insertion of this ligament was not once ruptured. Schüller[3] also says, in reference to the same joint, that the palmar capsule, as he calls this ligament, regularly ruptures at its metacarpal insertion in backward dislocations. In my limited experiments upon the cadaver (through the kindness of Professor Dwight and of Drs. Newell and Conant) the glenoid ligament was always ruptured at its metacarpal attachment in case of the fingers. With the thumb, however, the sesamoid bones seemed to make a difference, and in the few experiments tried, the ligament was ruptured nearer its centre; once directly through the sesamoid bones.

It is upon this pathological fact — the rupture of the glenoid ligament and its place of rupture — that all procedures for reduction must be based, and from ignorance of it that all the trouble from wrong procedures has arisen, just as in the case of the hip joint before Bigelow discovered the part played by the Y ligament. Indeed, there is quite a striking analogy in the case of the two joints in the matter of ignorance of the exact cause of the dislocation, and consequently of wrong procedures in the reduction. In attempts to reduce the hip by extension alone, the femur has been fractured, and irreparable injury done. In attempts to reduce the first phalanx by extension alone, it has been torn off, according to Hey.

The glenoid ligament, being ruptured then at the point named, the head of the metacarpal bone escapes through the rent, and the phalanx, with the torn ligament hanging to it, ascends the dorsum of the metacarpal bone. At the same time, also, the anterior fibres of the lateral ligament are torn, though Schüller says these are not necessarily ruptured. In my own experiments, it seemed necessary that these ligaments should be more or less ruptured in order that the head of the metacarpal bone should escape entirely through the rent

Having, then, a complete dislocation, the disposition of the parts is as follows for the index finger, according to Jalaguier. The phalanx rests by the anterior part of its articular face, upon the neck or dorsal surface of the metacarpal bone (Fig. II). It is held there by the flexor tendon, deviated within by the extensor tendon, which raises the skin, and by the remnants of the lateral ligaments. The glenoid ligament, which has followed the phalanx, is in contact with the head and dorsal surface of the metacarpal bone (Fig. II). Its palmar surface has become dorsal, and corresponds to the anterior face of the dislocated phalanx, with which it forms an angle with its apex above; open if one apply dorsal flexion, and closed by palmar flexion. Its articular face rests upon the neck, or even upon the dorsum of the metacarpal bone (Fig. II).



Fig. II.

Such being the disposition, the glenoid ligament must be brought into its place, and this can only be done by using the phalanx as a lever, and pushing before it the ligament which followed it in the act of dislocation.

The technique of the procedure is as follows: Carry back the phalanx in forced extension, keeping its base closely applied to the dorsum of the metacarpal bone. Then slide its articular surface upon the dorsum of the firmly-fixed metacarpal bone until it reaches the head of the latter, and finally flex the phalanx, when reduction ensues. All attempts at extension in a straight or flexed position, although they may be followed with success, offer the risk of making the dislocation irreducible, and are based upon a wrong conception of the part played by the glenoid ligament.

This is called the Roser or dorsal-flexion method, and also in this country, the Crosby method. Dr. Cutter quotes Dr. Crosby as saying in his lectures — "that he had never failed in the few cases which had occurred in his practice, although, in several instances, all other methods usually adopted had been tried without effect." Dr. Cutter, in the *Boston Medical and Surgical Journal* for 1857, Vol. XVII, p. 172, gives so admirably his procedure with this method, in case of the thumb, that I will reproduce it here: — "I placed the patient," he says, "in a common chair, and took a seat in another at his side, both of us facing the same way. An assistant sat behind us to hold the patient's elbow fixed. I then took hold of the metacarpal bone with my right hand, my forefinger passing between his thumb and forefinger, and my thumb resting on the top of the metacarpal bone, with the end touching the dislocated end of the phalanx. With my left hand I tipped

[2] Notes on Dislocations of the Thumb, reprinted from Dublin Journal of Medical Sciences, May, 1883.
[3] Chirurgische Anatomie, part I, 1885.

the phalanx back until it stood perpendicularly on the metacarpal bone; then pressing the phalanx forward by the end of my right thumb, it was readily carried by flexion into place, and the joint restored to its natural condition. The manipulation was performed in a twentieth part of the time taken to describe it."

If the method of dorsal flexion, when carefully and thoroughly applied, does not succeed, the indication is that the dislocation is a *complex* one, as Jalaguier terms it. This condition is generally, if not always, induced by improper manipulation, namely, by first flexing the phalanx, and then making traction upon it.

This procedure has a tendency to raise the phalangeal border of the glenoid ligament, instead of pushing the whole ligament towards the extremity of the metacarpal bone. The ligament then becomes completely reversed, its palmar surface resting upon the metacarpal bone, and its articular surface looking upward and towards the phalanx. It is interposed between the articular surfaces, and is spread out over the dorsum of the metacarpal bone, extending about a centimeter backwards from its phalangeal attachment (Figs. III and IV), thus forming an insuperable obstacle to the reduction of the dislocation. Ranke,[4] quoted by Jalaguier, opened the joint on the palmar surface in an irreducible dislocation of the index finger, and also of the thumb, and in both cases, found the glenoid ligament interposed between the two articular surfaces. The two sesamoid bones in the glenoid ligament of the thumb, and the single one in that of the index finger, when it exists, offer an additional impediment to the reduction, says Tillaux, as one would suppose. Schüller, says, with reference to the thumb, that it has been made perfectly clear that the difficulty in re-position most frequently depends upon the interposition of the capsule, as he calls the glenoid ligament. Far more seldom, he continues, upon the interposition of the tendon of the long flexor, or upon the incarceration of the head of the metacarpal bone between the muscles inserted upon the phalanx (flexor brevis pollicis). Lawrie, quoted by Kelly, also says that the interposition between the bones of the passive anterior wall of the articular fossa (which is practically the glenoid ligament) is the cardinal difficulty in reduction.



FIG. III.

Numerous are the anatomical reasons which have been given to explain this difficulty of reduction. In the "Encyclopædia of Surgery" (Vol. III, p. 679), it is ascribed to the imprisonment of the phalanx by the lateral ligaments. In Holmes's "System of Surgery," the author, upon the subject, states that the majority of writers have agreed that the flexor brevis pollicis is in some way the chief obstacle to reduction in case of the thumb. Hyrtl says that the head of the metacarpal bone is encircled by the two heads of the short flexors of the thumb as in a tightly-locked vise. Hamilton gives the reasons of many other authors.

In a complex dislocation, then, when the glenoid ligament is reversed and interposed between the two articular surfaces — a condition which is rarely primary, but due to traction made upon the flexed phalanx — what is to be done? The only chance of success, and that a small one, is an attempt to disengage the glenoid ligament, and change the dislocation from a complex to a simple one.

[4] Berliner Klinische Wochenschrift, 1877.

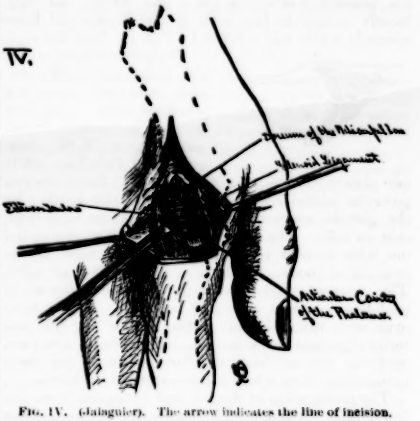


FIG. IV. (Jalaguier). The arrow indicates the line of incision.

To accomplish this, the same method of dorsal flexion is to be used to an extreme degree. The phalanx must be carried, if possible, beyond and behind the torn metacarpal border of the glenoid ligament, and so establish the immediate contact between the articular surface of the phalanx and the dorsal face of the metacarpal bone; then the phalanx can be carried forward, pushing the ligament before it, and finally flexed.

If this does not succeed, then the patient must submit to the inconvenience of a dislocated joint all his life, or recourse must be had to surgical interference. To apply extreme extension by means of such arrangements as the Levis apparatus, Indian puzzle, or the clove-hitch seems to me to be hazardous and irrational. Surgical interference being determined upon — as it should always be when the luxation is irreducible — what should it be, and how executed?

Numerous operations have been devised and done. Resection; section of one or both of the heads of the flexor brevis muscle, in case of the thumb; or of one or both of the lateral ligaments; or section of both muscle and ligaments; and finally, by M.M. Farabeuf and Jalaguier, dorsal subcutaneous section of the glenoid ligament, a method which they declare is both simple and absolutely efficacious. This can be done either subcutaneously or by open wound; the former would naturally be chosen.

The only instrument required for this operation, M. Jalaguier says, is a strong tenotome, with a short blade and a rather blunt point. The landmarks for the index finger are the posterior border of the glenoid cavity of the phalanx, which can be easily felt on the dorsum of the hand, and the extensor tendon. One must also determine the exact situation of the dorsal face of the metacarpal bone in its relation to the phalanx, to see whether or no the two bones are in the same axis as they should be, in order that the middle of the glenoid ligament may lie upon the middle of the dorsal face of the metacarpal bone. In order to favor this, M. Jalaguier suggests that the phalanx be brought back upon the dorsal face of the metacarpal bone. In my experiments with the operation, I found that the exact

position, antero-posteriorly, of the phalanx did not make so much difference, but the two bones must be in the same axis; perhaps the best position of the phalanx is that of an obtuse or nearly right angle with the metacarpal bone. An assistant should hold the finger firmly, and making traction upon it, M. Jalaguier says, which did not seem to me to be necessary. In the thumb, and when a sesamoid bone exists in the index finger, it must be avoided. The tenotome is to be entered about two centimeters behind the base of the phalanx, and immediately outside of the extensor tendon.

Being kept flat upon the dorsum of the hand, the knife is glided under the integument until the articular surface of the phalanx is reached. Then the handle of the knife is raised so as to lower the point, and bearing hard down upon the dorsum of the metacarpal bone, the section of the glenoid ligament is made by withdrawing the knife about a centimeter (Fig. IV). In my trials, I did not always find it necessary to incise the whole extent of the ligament, but sometimes a small incision upon its torn edge seemed to be all sufficient to allow the head of the metacarpal bone to slip back into place. If the reduction does not immediately and easily follow, the knife can be entered again and the operation repeated, for perhaps some portion of the glenoid ligament escaped incision in the former attempt.

It is hardly necessary to say that antiseptic precautions should be used. The finger should be fixed in flexion upon a tampon or wad of some light material placed in the palm of the hand. This, then, is the simple and successful method of operation in irreducible dislocations of the fingers, as proposed and executed by M.M. Farabeuf and Jalaguier, the latter of whom says in recapitulation, that, given a *complex* backward metacarpo-phalangeal dislocation of the thumb, or any one of the four fingers, attempt at first to reduce it by dorsal flexion. In case of failure, do not hesitate to use the bistoury to divide the obstacle. It is irrational to attack the muscles and lateral ligaments whose preservation is precious. The incision of the glenoid ligament made on the palmar surface is difficult and dangerous. The simplest and surest method is to cut this fibrous band on the dorsal face, subcutaneously.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

RACE-CHARACTERS IN THE SPINAL COLUMN.[1]

Professor Cunningham has studied the lumbar curve of the spine in different races of men, in a few anthropoid apes, several lower ones, and some quadrupeds. He has used both frozen sections and measurements of separate bones as methods of investigation. He considers that the lumbar curve is a characteristic of less importance than is usually supposed, as he finds it in not only the higher but in the lower apes, and apparently sometimes in quadrupeds. Still it is less marked in the lower than in the higher races of mankind. In the lower races as well as in the higher it is greater in women than in men. The difference between the height of the front and back borders of the vertebræ is stated to be so slight that it cannot cause the curve, but, on the contrary, is a result of it. Though the lower races of men have the curve, the vertebræ are not moulded in accordance with it, as in the higher. It is evident that the deeper the front of the vertebræ, so much more stable must be the curve, and at the same time there must be a loss of power in bending forward. As to the origin of the curve, Professor Cunningham holds that it cannot be due to an immediate and mechanical influence operating upon the vertebral bodies during the life of the individual, for in that case the same character would be found in the lower races and even in anthropoids. It is, according to him, a hereditary condition. In the European, flexibility, which is a necessity with the savage, is sacrificed to stability. We fail to see anything in this theory that accounts for the early stages of the stronger curve of the Caucassian with the longer anterior surfaces of the bodies, but it is fair to say that the original paper, as read before the Academy, has not reached us.

In another paper the same author gives some very interesting results of studies of the spinous processes in the cervical region. "It will generally be noticed that in low races the cervical neural spines are relatively shorter and more stunted than in the European. More especially can this be observed in the case of the neural spine of the third cervical vertebra. This condition is obviously for the purpose of allowing greater freedom of movement in the cervical section of the spine, and is to be associated with other peculiarities present in the lumbar region of the low races, which give to the loin segment a greater flexibility and suppleness." The point, however, which he particularly considers in this paper is whether or not the spines of certain cervical vertebræ are forked at the end. The long spine of the axis is almost invariably bifid, that of the seventh is always simple, and that of the sixth almost always. Those most likely to vary in this respect are those of the third, fourth and fifth, but Professor Cunningham has included the second in his series. The following tables are the most important ones. The first shows the nature of these spines in 15 European skeletons, the second in 24 of lower races.

Second Cervical Vertebræ,	15 bifid,	0 feebly bifid,	0 non-bifid.
Third " "	10 "	3 "	2 "
Fourth " "	9 "	4 "	2 "
Fifth " "	9 "	5 "	1 "

Second Cervical Vertebræ,	18 bifid,	5 feebly bifid,	1 non-bifid.
Third " "	3 "	6 "	15 "
Fourth " "	2 "	7 "	15 "
Fifth " "	3 "	10 "	11 "

These tables speak for themselves, and show the greater tendency to simplicity in the spines of the lower races. The single case of an absolutely simple spine of the axis was in a negro. The author points out that the processes least frequently bifid in the lower races are those of the third and fourth, which are also the smallest, and this arrangement allows greater extension of the neck, as the longer spines above and below can close over these shorter ones.

AN ABDUCTOR LONGUS OF THE LITTLE FINGER.[2]

Dr. Colson has observed this anomalous muscle three times. In the first case the muscle arose from the inferior third of the inner border of the ulna and

[1] The Lumbar Curve of Man and Apes, by Prof. D. G. Cunningham, Nature, February 18, 1886. Abstract of paper read before Royal Irish Academy.
The Neural Spines of the Cervical Vertebræ as a Race-Character, by the same. Journal of Anat. and Phys., Vol. xx, part 4, July, 1886.

[2] Annales et Bulletin de la Société de Médicine de Gand, 1886.

lay against the *flexor carpi ulnaris*. Becoming tendinous, it passed on the outer side of the pisiform, which it grooved, and was inserted into the inner side of the first phalanx of the little finger. It sent also a tendinous expansion to the head of the metacarpal.

In the two other cases the insertion was the same, but in one, instead of arising from the ulna, it arose from the fascia of the *flexor carpi ulnaris*, and, in the other, owing to an accident, its origin could not be determined. Its action appears to be to abduct the little finger. These observations are believed to be unique. The muscle, moreover, is not found in apes, and the author is inclined to think it a case of a progressive anomaly, that is to say, the first appearance of a new muscle.

THE MINUTE ANATOMY OF THE BRACHIAL PLEXUS.[3]

The abstract of this paper, which was read in March, is all we have as yet seen, but we hope the entire paper will soon appear. Mr. Herringham has undertaken to trace the fibres of the spinal nerves through the intricacies of the plexus, and in some cases at least to their ends. He has made 55 dissections of which 32 were of fœtuses. The labor that this implies is great indeed. We do not give his results, which would be of no interest to most readers, but pass on to the laws which he has formulated.

"First. Any given fibre may alter its position relative to the vertebral column, but will maintain its position relative to other fibres.

"Second (*a*) Of two muscles, or of two parts of a muscle, that which is nearer the head end of the body tends to be supplied by the higher, that which is nearer the tail end by the lower nerve.

"(*b*) Of two muscles, that which is nearer the long axis of the body tends to be supplied by the higher, that which is nearer the periphery by the lower nerve.

"(*c*) Of two muscles, that which is nearer the surface tends to be supplied by the higher, that which is further from it by the lower nerve."

The following law applies to sensory nerves:

"Third (*a*) Of two spots on the skin, that which is nearer the præaxial border tends to be supplied by the higher nerve.

"(*b*) Of two spots in the præaxial area, the lower tends to be supplied by the lower nerve, and of two spots in the postaxial area, the lower tends to be supplied by the higher nerve."

The author states that similar results have been reached by others by means of other methods of research.

THE NERVE SUPPLY OF THE FLEXOR BREVIS POLLICIS.[4]

It is well known that the cutaneous distribution of most nerves is very variable and that it is far from uncommon to find more or less of the area usually supplied by a certain nerve occupied by the branches of a neighboring one, but on the other hand, there is very little variation in the nervous supply of muscles. A muscle has indeed been defined as the terminal organ of a nerve and the nerve supply has been made a criterion of the nature of anomalous muscles. Mr. Brooks's paper, in which he shows that variation is common in the nerve supply of the short flexor of the thumb, is a very important one. According to the text books, the outer head is supplied by the median nerve, and the inner by the ulnar. Mr. Brooks gives the result of 31 examinations, of which 5 present the above "normal" arrangement. In 5 more the ulnar supplies both heads; in 2, the median besides supplying the outer head supplies a part of the inner, and in 19 or more than half the cases, the inner head is supplied by the ulnar, and the outer by both ulnar and median.

THE MORPHOLOGY OF THE THYROID GLAND.[5]

This exhaustive paper is based on observations made at Basle where goitre is endemic, and as the author says, it is relatively uncommon to find a normal thyroid at an autopsy. Hence the paper is in a sense a pathological one, but as will appear it belongs also to normal anatomy. The first point considered is the pyramidal process, which is a projection upward from the isthmus or from one of the lateral lobes. Accounts differ as to its frequency. Gruber found it in forty per cent, Luschka in one third, and Zuckerkandl in seventy-four per cent of all cases. Streckeiser found it 104 times in 153 subjects. In 16 of these cases there was also an accessory thyroid. Besides these, there were in 17 cases an accessory thyroid without a pyramidal process. As these accessory glands were in all probability portions separated from the main organ either before or after birth, they may properly enough be held to represent pyramidal processes. If this be admitted, our author finds this process in seventy-nine per cent. As to its origin, it sprang from the isthmus 7 times, from the right lobe 49 times, from the left 47, and once from each lateral lobe. The pyramidal process is usually connected with the hyoid either by the glandular tissue reaching directly to it, or by the interposition of fibrous or muscular tissue. A connection of some kind was wanting only 16 times in these 104 cases. Of the remaining 88 cases, in 55 the connection was by a continuation of the glandular structure, in 26 by ligament and in 7 by muscle. The point of attachment is usually a little to one side of the middle line. An important point in view of the development of the organ is that the connection is usually with the posterior, concave surface of the hyoid bone.

Dr. Streckeiser divides accessory thyroids into true and false; the former being free from the chief gland, while the latter are joined to it by fibrous tissue. Both as a rule have, according to him, a similar origin, being pieces cut off from a pyramidal process. As a larger percentage of true accessory glands is found in persons over forty years old than in the younger, he believes that the separation occurs often long after birth.

The *levator glandulæ threoideæ* is a well-known occasional muscle, but one of which we do not know the relative frequency. Streckeiser has looked for it in 120 subjects and found anomalous muscles 73 times in 46 individuals; which shows that though such a muscle is absent in nearly two-thirds of the cases, when it is found it brings other irregularities with it. Very certainly we do not find it with any such frequency in our dissecting rooms and it is not unlikely that the enlargement of the gland has to do with the development of the muscle.

We pass over the description of the arteries, merely

[3] W. P. Herringham, M.R.C.P. Proceedings of the Royal Society, Vol. xl, 1886.

[4] By Mr. H. St. John Brooks, Journ. of Anat. and Phys., Vol. xx, part 4, July, 1886.

[5] Virchow's Achiv. Bd., 103, 1886, by Dr. Streckeiser.

mentioning the relations of the inferior thyroid to nerves. It may pass either before or behind the recurrent laryngeal nerve and very often incloses it more or less completely in a loop.[6] With regard to the sympathetic also, there is apparently no certainty on which side of the artery it is to be found. A middle thyroid artery was observed 12 times in 120; precisely ten per cent, the proportion given by Gruber.

As was stated in this series of "Reports" both Zuckerkandl and Kadyi discovered in 1879 glandular tissue near the hyoid bone, sometimes before the fascia of the mylo-hyoid, sometimes deeper between the genio-hyoids, or in the insertion of one of them. Kadyi described particularly a supra-hyoid gland below the *septum linguæ* and occasionally prolonged into it. These glands were of the same structure as the thyroid and occasionally cysts were found in their place. All cysts of this region, however, do not have the same origin and, not to trench on the domain of pathology, we will leave them out of the question. Streckeiser classifies as follows the accessory thyroids of this region which, it is needless to say, are usually very small. First, those before the mylo-hyoid: *præ-hyoid;* second, those between the genio-hyoids or inside one of them: *supra-hyoid;* third, those nearer the tongue above the genio-hyoids: *epi-hyoid;* fourth, those in the hyoid bone: *intra-hyoid.*

The last of these is the most curious. To see it properly, microscopic sections should be made of the decalcified hyoid. It appears to be derived from the *supra-hyoid gland* which may grow into the ossifying or into the ossified bone. It is not found in the fœtus. The intra-hyoid does not show the normal structure of the thyroid but is always in a state of cystic degeneration. One would be inclined to think that this might be accounted for by supposing that a diseased *supra-hyoid* grew into the bone, but this is not supported by observation.

It is known that the thyroid is developed from an outgrowth from the pharynx, though contradictory statements have been made as to the details. According to Kölliker and others, the outgrowth is, or soon becomes, solid in mammals and as it enlarges is connected by a long stem with the epithelium of the pharnyx which at last is cut off. It is known that Bochdalek found in many cases a canal in the tongue running from the *foramen cæcum* and cysts also occur in this region. For these reasons, Streckeiser believes that the *foramen cæcum* represents the starting point of the divertieulum that becomes the thyroid. The gland grows down the neck in front of the hyoid bone, those parts that are found behind it being secondary growths. This theory sheds much light on the origin of certain cysts. The author adds a postscript to his article to state that since he has finished it, the third fasciculus of His's work on the anatomy of human embryos has appeared in which that great authority demonstrates the relation of the central starting point of the thyroid to the *foramen cæcum.* His, however, teaches that the course of the thyroid is behind the hyoid.

— A Pennsylvania man lately attempted suicide with Paris green, and the physician who was called said that he could not have saved him if the poison had not been adulterated. "It's an ill wind," etc.

[6] Vide last number of Journal.

Clinical Memorandum.

OVERDOSE OF HYDROBROMATE OF HYOSCIN.

BY S. G. WEBBER, M.D.

Immediately after breakfast Miss —— took a teaspoonful of a solution of hydrobromate of hyoscin by mistake for a diuretic. The formula of the preparation was

℞	Hydrobromate Hyoscin	gr. ss.
	Alcohol	ʒ iss.
	Aq.	q. s. ut fl. ʒ x.

thus each ten minims contained a hundred and twentieth of a grain. The teaspoon, being measured, was found to contain one hundred minims, so that the amount taken was about one-twelfth of a grain.

Finding she had taken the wrong medicine, she immediately took a teaspoonful from the right bottle, one containing acetate of pottassa. About an hour later it was noticed that her face was flushed, and on being questioned, she told what she had done. I was sent for. I found her with face much flushed, pulse 120, and very weak; she complained of feeling strange in her head and dizzy, said her hands and feet felt cold, but the hands seemed warm; later she spoke of numbness in hands and feet, and the sound of our voices seemed distant and muffled.

She was given two drachms of wine of ipecac, and within ten minutes mustard and water. Emesis was assisted by draughts of warm water. Whether owing to the food in the stomach or the action of the drug, it was difficult to empty the stomach, and a large quantity of mustard and water was given before all the breakfast was ejected.

About half an hour after the treatment was commenced, her hands and feet felt much more numb, she was very sleepy, it was difficult to keep her awake. The pulse was still rapid and weak. A fifteenth of a grain of morphia was given subcutaneously, and the pulse soon was reduced to 108. In about twenty minutes another fifteenth brought the pulse to 84. The sleepiness continued all day, and there was a distaste for food. The night was quiet, she slept soundly, and the next day simply had a headache.

Reports of Societies.

PROCEEDINGS OF THE BOSTON SOCIETY FOR MEDICAL OBSERVATION.

CHARLES P. STRONG, SECRETARY.

May 3, 1886.

Dr. E. O. Otis presented a paper on

BACKWARD DISLOCATION OF THE PHALANGES UPON THE METACARPUS.[1]

Dr. J. E. Kelly expressed great interest in the paper which he had heard, especially as he had given much attention to the subject some years since in connection with dislocation of the thumb. He corroborated the anatomical description, except with regard to the posterior ligament of the metacarpo-phalangeal articulation, which, in the thumb, had a distinct identity, while, as Dr. Otis had said, it was replaced in the other digits by the extensor-tendons and their expansions.

[1] See page 202 of this number of the Journal.

The specimen which Dr. Otis exhibited corroborated this assertion which Dr. Kelly had made, contradictory to other anatomists in a paper which was published in the *Dublin Journal of Medical Science*, May, 1883, and containing many other original anatomical observations.

In numerous instances of digital luxations, Dr. Kelly had only experienced difficulty in very few cases, and by the strangeness of surgical coincidences, two children fell under his observation shortly after he had written his paper, but in both the dislocation was lateral towards the mesial line of the hand. The resistance was most remarkable, and in these cases, could not be muscular. He considered that the metacarpal head had been forced through a lateral "button-hole" opening in the aponeurosis formed by the ligamentous structures, and the expansions from the numerous tendons surrounding the metacarpo-phalangeal joint, a portion of which intervened between the displaced bones. Acting upon this assumption, Dr. Kelly reduced the dislocations, although with extreme difficulty, by an adaptation of the manœuvre which he has described in his "Notes on Dislocations of the Thumb."

He had also proposed the operation which Dr. Otis had quoted in almost identical phraseology, although an interval of more than two years and a half had intervened between Dr. Kelly's article and that of Dr. Jalaguier, which appeared in January last. Dr. Kelly showed some appliances which he had invented, and which also were figured and described in his paper, and he claimed for them superiority over all other instruments intended to aid in the reduction of dislocation of the phalanges, owing to the absolute control over the dislocated phalanx which they afforded the operator, and to the economy of force consequent on the lesser or more proximate curves which the hand described in the evolutions necessary for the reduction. To his forceps he had added a clip or ratchet, which prevents the phalanx from being crushed by the immense power at the disposal of the surgeon, and he expressed his disapprobation of Levis's apparatus, which was defective as an instrument of fixation of traction and of leverage.

DR. NICHOLS said that prior to the introduction of ether in Paris, he saw Nèlaton attempt to reduce a dislocation for over an hour by all the various methods unsuccessfully, and subsequently accomplish the reduction by cutting the lateral ligaments.

DR. BLODGETT mentioned the frequent occurrence of this accident among base ball players, and the ready and immediate reduction by the methods of forced flexion, as described by Dr. E. O. Otis.

SUFFOLK DISTRICT MEDICAL SOCIETY.
SECTION OF OBSTETRICS AND GYNÆCOLOGY.

ROBERT B. DIXON, M.D., SECRETARY.

APRIL 21, 1886, DR. JAMES R. CHADWICK in the Chair.

Dr. S. W. DRIVER read a paper entitled

OBSTETRIC GLEANINGS; OR EXPEDIENTS AND MISTAKES.

DR. WEEKS, in opening the discussion, said that it was his custom to give fifteen-grain doses of chloral repeated every twenty minutes until forty-five grains had been administered, in those cases where the os was rigid and unyielding. He found by this practice that the labor was shortened and that no unpleasant effects followed the use of the drug.

DR. KINGMAN mentioned the method of delivering the shoulders of the child as it is practised in Prague. The anterior arm is delivered first by carrying the head well back, this bringing the posterior shoulder into the hollow of the sacrum. As the anterior shoulder descends, two fingers of the hand corresponding to the child's back are carried into the axilla, where traction can be made if necessary, and then being advanced along the humerus, the arm is easily swept down past the pubic arch.

The result of this procedure is to greatly diminish the danger of laceration of the perineum by the shoulders and facilitate the delivery.

DR. J. L. SULLIVAN said that in those cases in which Dr. Driver proposed using the muriate of cocaine, namely, where there was great and unusual sensitiveness of the os uteri so that each pain is a dreaded agony, he has used morphine in one-half hourly doses with the effect of not only relieving the excruciating pain, but of causing rapid dilatation of the os. In such cases dilatation is ordinarily tedious unless relief of suffering is by some means afforded.

DR. CHADWICK remarked that he was skeptical about the amount of dilatation of the cervix that could be accomplished with the fingers in an ordinary labor; the hand being without the vagina. If the os is small and the cervix thin something may be gained, but if the external os is rigid and the cervix is not thin then but little will be gained by pushing in two or three fingers. The finger may be hooked over the os and draw it down so as to change its relations to the outlet of the pelvis. If the os is directly under the presenting part it will dilate better and possibly it might dilate if it is pulled forward. If the anterior lip of the cervix is œdematous much may be gained by pushing it up above the pubic ramus. He had found that when an occiput posterior would not stay rotated that if the posture of the woman was changed, for instance, from the right to the left side, then the head would remain where rotated.

DR. WEEKS stated that he had tried dilating the os with the fingers but he had noticed very little benefit therefrom, so that now he has given up interfering with the os and finds that it obviates the frequent use of the forceps. If the cervical lip is swollen something may be gained by pushing it up, and by preventing pressure upon the bladder, paralysis of that organ will be avoided. Dr. Weeks said that he had probably been more fortunate than most practitioners for he had never been obliged to perforate a head, and but twice had he turned a child. In these cases the pains were not good, and the forceps were of no avail. There was no narrowing of the pelvis the fault being with the planes.

DR. REYNOLDS remarked that the expedient of turning was sometimes of great value in occiput posterior positions. He spoke of the plan recommended by Dr. William L. Richardson of putting the forceps on upside down in order to flex the head when rotation would usually take place itself in a few moments. It was not the intention to rotate the head with the forceps. The strong point in Dr. Richardson's method was that rotation would take place when the head was flexed unless there was some great disproportion between the head and the pelvis.

DR. DRIVER, in closing the debate, said that he

thought the small manœuvre of dilating the os assisted labor very much. If the anterior lip should be pushed up he would be afraid that the head would slip through and produce a lateral tear of the cervix. He liked to be sure that the os was thoroughly dilatable.

Dr. Charles Sedgwick Minot then spoke as follows regarding

THE ACTUAL AS COMPARED WITH THE SUPPOSED STRUCTURE OF THE PLACENTA.

The human placenta is composed chiefly of the fœtal chorion, and is not a modification of the allantois, which, as shown by His, extends only to the chorion. In its earliest stage the chorion consists of two layers — the external epithelium or ectoderm and the inner connective tissue. The epithelium shows no really distinct cell boundaries. The connective tissue consists of a glistening matrix in which lie the rounded cells; both these layers are found in the villi, which grow out from the chorion, and abut, by their tips, against the decidual surface of the uterine wall. The umbilical vessels ramify in the connective tissue layer of the chorion, the branches penetrating the villi. These relations are all persistent, hence, the placenta consists of 1, the chorionic membrane; 2, the chorionic villi, with their extreme tips slightly imbedded in 3, the decidua serotina. Contrary to all previous writers, Dr. Minot found the chorionic epithelium to persist normally through the whole period of gestation, and over all parts of the chorionic membrane and villi; it undergoes, however, remarkable metamorphoses, being transformed in spots, which often fuse into larger areas, into a thick layer of cell (Langhan's *Zellenschicht*) which may further be partially or completely degenerated, so forming the layer known as the canalized fibrine layer. The decidua subchorialis is only part of the modified chorionic epithelium. No maternal layer covers the chorion or any part of the villi, except the very tips. The villi do not grow into the glands. The decidua serotina contains very few blood-vessels.

The maternal circulation in the placenta is not yet understood. It is very doubtful whether blood is normally present in the inter-villous spaces during life; if it is present it may enter *per diapedesin*, there being no channels known for a maternal inter-villous circulation. It is possible that the nourishment of the fœtus is really accomplished by a uterine milk similar to that found in ruminants.

Dr. Minot included a summary of the results obtained by the best investigators, and pointed out that the descriptions of the placenta in the standard text-books were, he believed, inaccurate, often extremely so. He related his surprise at having been unable to find in any manual at his command an account of the placenta which would enable one to even identify the prominent parts as seen in sections of the placenta examined under the microscope.

Dr. Minot replied to a question that the same decidual development took place in the uterus and Fallopian tubes, because they have the same tissues. There is a decidua in the Fallopian tube.

Dr. Chadwick remarked that the exfoliation of the decidua at the third or fourth month and the enlargement of the uterus were chief diagnostic signs of extra-uterine pregnancy.

Dr. Reynolds asked if the ends of the villi are embedded in the mucous surface of the uterus to be dragged out in early abortion and leave a broken, depressed surface.

Dr. Minot replied that the villi do go a little ways into the placental decidua, and when torn off may take away some of the latter tissue.

Dr. E. W. Cushing asked whether Ercolani's view, that the covering of the placental villi is maternal and that the decidua is a "new formation," is tenable, and also what is found between the villi.

Dr. Minot replied that Ercolani was in error in regard to both points; that the villi are covered at all times by the fœtal epithelium of the chorion must be regarded as certain; the speaker knew of no reason for considering the decidua as anything more than the altered mucosa of the uterus. Between the villi very often the placentæ examined by Dr. Minot had contained nothing but fluid, or, again, the inter-villous spaces are surcharged with maternal blood; it must be deemed doubtful whether the blood is normally present *intra vitam*. He remarked that even in regard to the gross anatomy of the placenta many of the text-books present certain erroneous statements.

FIBROID TUMOR.

Dr. E. W. Cushing showed a fibroid tumor, with the following history: Mrs. X., fifty years old, had suffered for several years with menorrhagia, which, during the last few months, had been so severe that her physician, Dr. F. E. Corey, of Westboro, had advised her to seek relief in an operation; therefor he had brought her to Dr. H. O. Marcy. On examination, a tumor much larger than a child's head was found, filling the upper pelvic and lower abdominal regions. It presented at the os uteri, like the head of a fœtus (the os being about two inches in diameter); it was, however, submucous and not pedunculated. As it was evidently too large to remove in one piece, the question of laparotomy was discussed, but it was finally decided to remove it per vaginam, and the operation was performed by Drs. Marcy and Cushing at their hospital, aided by Drs. Corey, R. J. P. Goodwin and M. Greely Parker. The vagina was irrigated before and during the whole operation with a hot solution of corr. sublimate 1:2000. There was very little hæmorrhage. On cutting through the mucous membrane, the tumor itself presented, and was seized with the strong Martin double hooks, and brought down as far as possible; then with powerful scissors a wedge-shaped piece was cut out, and the same process repeated until fourteen pieces had been thus removed. In order to accomplish this the spoon-saw was used to shell the tumor out of its capsule, and afterwards Dr. Marcy passed his hand into the opening made with the spoon-saw, and further separated the mass from the uterine wall. By prying the tumor to one side and the other it was possible to reduce it as above, until the fifteenth and last piece was delivered edgewise, being larger than a man's two fists. The cavity was well washed with sublimate solution, powdered with iodoform and packed with iodoform gauze (Grosvenor and Richard's), as was also the vagina.

There was serious shock, relieved by repeated subcutaneous injections of brandy and ergot. On the third day, the temperature, which had remained normal, rose suddenly to 103°, with acute cystitis. This attack was caused by the passage of a catheter, by the nurse, without previous cleansing of the urethral orifice with sublimate solution. The catheter was clean,

but microbes from the vaginal orifice were carried into the bladder, setting up a cystitis, just as it frequently happens after childbirth. Repeated injections into the bladder of sublimate solution 1:5000 soon stamped out the cystitis. During the latter the urine showed great numbers of long, thin rods, some of which were one two-hundredth of an inch in length, with pus cells in abundance. In nutrient gelatine this organism grew rapidly on the surface, not in the needle-track, not fluidifying the gelatine.

Except for this accident the patient did very well, temperature nearly normal, the wound or cavity diminishing rapidly and granulative. The treatment was by careful sublimate irrigations, and iodoform gauze packing, as above.

On the eleventh day, when everything was progressing favorably, the husband of the lady foolishly, and against strict injunctions, persuaded her to get up and put on her clothes, and walk to a chair, he being alone with her while the nurse was at church. That night her temperature went up to 103°, and the next day to 105°. Careful exploration showed that there was a sort of pocket formed by the doubling forward of the uterine wall; this may have been there and contained secretion for some time, but did no hurt until, probably from her getting up, the cavity became septic.

For a few days it was a hard struggle to keep down the trouble, the temperature jumping up from 101° to 105° repeatedly, but plenty of sublimate solution and iodoform, at short intervals, stamped out this trouble also, and the patient was discharged on the fifth week, well enough to return home safely. The tumor was carefully matched and sewed together, forming a round regular mass 4½ x 5 inches, weighing four pounds after some blood had drained from it. The separate pieces as it was removed, averaged about 2 x 3 x 1 inches. The perineum, vagina and cervix were not wounded.

A PIECE OF SILK LIGATURE HALF AN INCH LONG DISCHARGED FROM AN ABDOMINAL SINUS TWO YEARS AFTER AN OVARIOTOMY.

DR. FARLOW showed a piece of silk ligature half an inch long, with the knot still visible, which had remained in the abdomen for two years after an ovariotomy, and which had probably been one of the causes of the long continuance of an abdominal sinus, which closed immediately after the discharge of the ligature. Carbolized silk ligature were used at the operation. The patient made a good recovery, with the exception of a sinus opening near the umbilicus, and into which a probe passed deeply toward the pelvis.

Various attempts were made to cause this to close, but without avail, until one morning, two years after the ovariotomy, the patient, when bathing the sinus, noticed a small piece of what she took to be a bit of tissue. After washing this, she saw that it was a piece of silk, and sent it to me to see if it could possibly have come from the operation. The sinus immediately began to close, and has not opened again although it is nearly seven months since the silk came away. Under the microscope the silk fibres are seen to be in perfect condition. Bearing in mind in what a disintegrated condition we usually find ligatures, even a week after an operation, and the fact that silk ligature is presumed to be absorbed very quickly and completely, we must wonder what conditions enabled this to remain in the body for two years, and apparently in a suppurating cavity.

ANNUAL MEETING OF THE AMERICAN NEUROLOGICAL ASSOCIATION.[1]

JULY 21, 22, 23, LONG BRANCH, N. J.

JULY 23, MORNING SESSION. — THIRD DAY.

EXHIBITION OF THE MEDISECTED ALINJECTED HEAD OF A MURDERER.

DR. WILDER exhibited a very beautiful specimen of the above mentioned head, and remarked that the features of the brain which was thus hardened and exposed in situ are to be discussed at a future meeting in comparison with another murderer's brain; the specimen shown is an illustration of the value of the method and continuous arterial alinjection which has been applied to a head, to brains and to larger bodies, (a child, a chimpanzee, etc.), in the anatomical laboratory of the Cornell University. The doctor remarked the main features of the method were:

(*a*) Reception of the head within twenty-four hours after death.

(*b*) Preliminary marking out of the vessels with chloral to which perhaps weak alcohol might be preferable.

(*c*) Continuous alinjection for a week.

(*d*) Continuity secured by a pressure of 80 mm. of mercury which was afterwards reduced to 40 mm. when the flow became somewhat free.

(*e*) Gradual increase of the alcohol from 65 to 90 per cent.

(*f*) Maintenance of a low temperature 8° to 11°C.

(*g*) Accurate division of the head with a fine saw acting in a mitre box.

(*h*) The small cost. The injected alcohol represented 41.5 liters and 95 per cent., but about two-thirds was regained; so at three dollars per gallon it would not cost eleven dollars, and at seventy-five cents (free of box) only three dollars.

DR. MILLS stated that he did not care to use alcohol for the preservation of specimens, but used in this way it might be different in its results.

DR. AMIDON remarked that a little corrosive sublimate put in the alcohol might secure still better effects.

DR. MILLS asked if there would not be great difficulty with a brain preserved in this manner in separating the pia-mater from the surface of the brain; whether the brain would not be considerably torn. The old method was to put the brains in a solution of chloride of zinc, the membranes could then be readily stripped off in a few days.

DR. WILDER replied that the question of Guiteau's brain could have been more fully discussed if it had been hardened in the skull, and he felt this very desirable in order to preserve its shape. He hoped to combine with this process the preservation of the brain so that the gyra and fissures could be studied. He had been preparing brains for the Museum of the Cornell University for some years and found alcohol to answer all requirements for the purpose of microscopical examinations. He insisted also that the brain should be in the dura, in its own bag, so to speak, then hanging the brain over a pail by the dura, alinjection is commenced; the brain then immediately fills the dura as though it were in the skull and no pressure upon any one point exists.

[1] Concluded from p. 190.

Dr. James H. Lloyd, Philadelphia, read a paper on

MORAL INSANITY: A PLEA FOR A MORE EXACT CEREBRAL PATHOLOGY.

The paper was devoted to a criticism of those who — in the manner referred to by Locke in his "Essay concerning Human Understanding" — confuse in their psychology the *power* with the *agent*. They personify the "faculties" and regard them as distinct agents, each with its own province and powers. This method was inherited from the philosophers, and is shown to have produced the artificial distinctions between "mind" and "brain" — and to have worked confusion, especially in the Scotch School, in the use of such terms as "consciousness" and "idea." The alienists in their writings have not escaped these errors — and many of the artificial distinctions, classifications and symptomatologies which abound in the books are directly traceable to them. Brief allusion was made to the definitions and tests which have been promulgated in the courts, and are found in the writings of Coke, Hale, Blackstone, Shelford, and Chitty.

To these we are indebted for such distinctions as "civic and criminal" and "partial and total" insanity. Also to such tests as "delusion" and "knowledge of right and wrong." These were all shown to be more or less artificial and incomplete from the very standpoint of Locke's Criticism — that is they ignore the individuality of the brain as one acting "substance," and grant to the faculties, or several activities, of the cerebral organ each its own autonomy, and its own disorders and diseases. They erect one symptom into a whole disease, and insist upon the presence or absence of this as a test.

The writer proceeded to an examination of the claims of so-called *moral* insanity as presented by some of the most advanced medical psychologists. This claim proceeds upon an abstraction just such as the reader was cautioned to avoid. It presupposes a distinct moral faculty — which may remain undeveloped in a mind intellectually normal, or may become diseased without affecting the other faculties. This was almost the worst form of abstraction and personification that had appeared in psychology. It is impossible to conceive of a moral or emotional act of mind which does not include the so-called intellectual faculties. In fact, in these acts it is the cerebrum taking on only different (and rapidly changing) modes of action. To say that it is diseased in one of these modes and not in the other is a sophism. It is more nearly correct to say that in an insane man it is the whole mental (cerebral) act — memory, judgment, emotion and will — which is wrong, as that these are all but modes of action of one diseased substance — the cerebrum. More careful analysis would prove this in the cases which are cited in the books as "moral imbeciles" — and which include evidently such diverse types as hysteria, katatonia, paranœa, imbecility, melancholia, and even delusional insanity. The subject has importance because it is often relied upon to acquit a certain class of lunatics in the courts, and almost invariably proves to be a broken reed to him who leans upon it. The paper closed with a reference to the labors of the experimental physiologists — especially Ferari — who have demonstrated the localization of many sensory and motor areas. It is not possible for them to demonstrate the localization of "judgments" and "emotions." These are phases of all cerebration, and, as Ferari distinctly states, exist both in the sensory and motor regions.

Mr. Jastrow remarked that he thought the public at large began to understand this subject better and were more and more in sympathy with the physicians.

The President stated he had great respect for the metaphysical and practical knowledge of Dr. Lloyd, but he must differ with him on some points: though perhaps it might be differences upon terms or expression rather than facts. He did not see what was to be gained by carrying out the ideas as expressed by Dr. Lloyd in regard to nomenclature and classification. In using such terms as monomania, paranœa, and coming to kleptomania or typhomania and even some of those small forms of so-called phobias: we do it understanding what we are doing, but do it as a matter of science and study. Again, Dr. Lloyd remarked that he did not bring forth the cases to prove the propriety of the use of such terms. The speaker thought Dr. Lloyd might not be thoroughly acquainted with all the cases produced in literature which led us to say that there are cases which deserve this designation of moral insanity. Men who have advocated the term moral insanity are perfectly well aware that in every case, unless it is where you have general paralysis, physical and mental, you must have exhibited mental impairment.

The cases to which this term, "moral insanity," should be applied, are cases which have all through life exhibited a preponderance of moral defect, a decided evidence of moral impairment, though in many cases you may find but little intellectual impairment. He agreed with Dr. Lloyd that the term had been used and had been made to cover cases of hysterical insanity, katatonia, etc. The President thought that while paying tribute to Dr. Lloyd's scientific and literary abilities, an acceptance of his ideas would rather retard than aid the advance of science in this direction.

Dr. Gray remarked that there were three classes of insanity; mania, melancholia and dementia: all other forms being simply forms of degrees of these. He did not see how we were to do away with the term, as it was an extremely difficult matter to draw the line sharply: but still we should know what it means and understand it.

Dr. Parsons thought the laity objected to it because it embraced so many forms of disease, it may mean emotional or wicked insanity. But in speaking of a man as having a diseased liver we do not mean to say that he is not sick. His views he thought had been well expressed by Drs. Gray and Mills.

Dr. Mills said he would like to ask a few questions. First whether in discussing the question of insanity, we have any right to use such terms as moral and immoral insanity. If so, in what sense should they be employed.

Do not those who see cases of insanity, frequently see those who present overwhelming predominance of moral or immoral phenomena? In a case, the trial of which lasted four weeks, the man being what we would term a delusional monomaniac plead his own case before the courts and the jury declared him sane. There was little or no immoral defect in this man's case, you could not use those terms.

Dr. Gray asked why we could not have localization in regard to the actions of the mind. If we can have mental symptoms by means of impairment of

localized areas why can we not have localized insanity by impairment of certain areas?

DR. LLOYD in closing the discussion remarked that he had in his paper already answered the subject of moral insanity, that it was something more than mere difference in terms; you quote a case of sudden murder and it is impossible for the man to know why he should do so unless there is something the matter with the brain. As to our courts we should not despise them; they have a right that a physician should express himself intelligently. In the case of a man killing his wife after years of happiness and affection on either side, he may say he killed her because he loved her, his brain is affected, his mind, his intellect is affected. It is, as was said in the paper, a mere word differentiation; it is not a differentiation of things. As to the subject of paranœa, it is a congenital defect of the mind; it comes from the mother's womb; it is hereditary. I do not say there is nothing in a classification.

DR. JACOBY presented for Dr. Rudisch a new portable battery, the chief point being that the cells containing the fluid can be left at home and the zincs and carbons replaced in the box. A current can be obtained from them after being once charged as late as at the end of four weeks. Between the carbons and the zincs a piece of stout asbestos paper is fastened by means of a few thin rubber bands. The fluid used in the battery is composed as follows: sal ammonia one and a half pounds, add six pints of water. The asbestos paper retains in its pores a large amount of moisture acting as a large voltaic pile.

A paper from DR. DERCUM was read, by title

FACTS AND DEDUCTIONS ON THE ACTION OF THE NERVOUS SYSTEM.

This closed the session of 1886.

Recent Literature.

Diseases of the Stomach and Intestines. A Manual of Clinical Therapeutics for the Student and Practitioner. By Prof. Dujardin-Beaumetz. Translated from the Fourth French Edition by E. P. Hurd, M.D., with illustrations and one chromo-lithograph. New York: William Wood & Co. pp. 389. 1886.

Disorders of Digestion: Their Consequences and Treatment. By T. Lauder-Brunton, M.D., F.R.S. London: Macmillan & Co. pp. 389. 1886.

Lectures on Dietetics and Dyspepsia, Delivered at the Owens College School of Medicine. By Sir William Roberts, M.D. London: Smith, Elder & Co. 1886.

These three books have appeared about the same time, and treat of similar subjects. They were all three the reproduction of lectures, and the first two, by a whimsical accident, contain precisely the same number of pages, though in other respects differing materially. They are all three suggestive and instructive books which deserve the space they may take in any physician's library, or the number of cerebral cells which may be required to store up their teaching in the brain. They not only show, however, what great progress has been made in the last ten years by physiology, physiological chemistry, and clinical therapeutics in the elucidation of dietetics and the disorders of the digestion, but also indicate how much remains that is still obscure or but faintly illuminated. The general term, dyspepsia, like the great African continent, is being pierced from various quarters by enthusiastic investigators, who are slowly forcing it to yield up its secrets, and are replacing the vague and the imaginary in the territory which it covers by the precise and the real. The buccal, the gastric and the intestinal dyspepsias are now recognized as perfectly distinct divisions, with distinct causes and subdivisions.

The lectures of Professor Dujardin-Beaumetz, of which there are twenty-five, form a complete and continuous treatise on the diseases of the stomach and intestines from the standpoint of clinical therapeutics. Dr. Dujardin-Beaumetz has published in French a series consisting of three volumes under the title of *Leçons de Clinique Thérapeutique.* The book before us, translated by Dr. Hurd, is really the second part of the first volume of that series; the first part, relating to diseases of the heart and aorta being omitted. This volume originally appeared in 1879, but the translation is from the fourth and revised edition of 1885, and the book profits by the latest discoveries, such as those of Selmi, Gautier, Bouchard and Brieger as to the production by the living cell of toxic alkaloids, ptomaines, leucomaines, etc. Especial attention is given to hygienic therapeutics, to food, and to alimentation.

The translation is well done, and the translator has arranged the notes — which are copious and contain a vast amount of information — at the end of each chapter or lecture, references being made to them by consecutive numbers in the text. There is a good index, and the title-page is preceded by a schematic table of the composition of the principal aliments in chromo-lithograph. This volume forms the May number of Wood's library of standard medical authors.

The basis of Dr. Lauder-Brunton's book is three lectures delivered as the Lettsomian Lectures before the Medical Society of London last year, January and February, 1885. When requested to publish them, the writer found they contained so many references to papers published by him at different periods, from 1873 to 1885, that he decided to include these between the same covers. The book, as presented to the public, consists, therefore, of the three Lettsomian lectures on disorders of the digestion, their consequences and treatment, occupying some eighty-two pages, and fifteen papers on a variety of subjects, more or less nearly correlated, occupying, with the index, the remaining three hundred and seven pages — a paper on "How to Make a Poultice" being among those less nearly related to disorders of digestion. A paper on "Poisons formed from Food, and their Relations to Biliousness and Diarrhœa," though written subsequently to the Lettsomian Lectures, is an important supplement to them. Lauder-Brunton, in common with Beaumetz, anticipates the probable results of a further study of the alkaloidal products of albuminous decomposition, and even suggests in his second lecture on indigestion, biliousness, and their consequences, the possible formation in the intestine of alkaloids having an action like that of some of the known cardiac poisons as an explanation of some cases of sudden death — as in gouty patients; that alkaloidal poisons exerting a slower action are formed is no longer

questioned. Poisoning may yet become a finer art than in the days of the Borgias.

These lectures and papers make a volume which is not only instructive, but eminently readable.

Sir William Roberts's lectures delivered at Owens College School of Medicine, Manchester, do not aim at covering so broad a field as the two preceding books, and are published in an unpretentious little volume. They treat mainly of the dietetics of difficult digestion, and the physiological action of the more common articles of consumption. They contain many useful facts and tables, and many suggestions which should prove fertile. Tea, coffee and alcohol are all shown to be retarders of digestion, and an explanation is offered of their universal and constant use in the too easy and rapid digestion and appropriation of food procured and prepared in highly civilized countries.

On some Forms of Paralysis from Peripheral Neuritis; of Gouty, Diphtheritic, or other Origin. By Thomas Buzzard, M.D., of London. Small octavo. 147 pp. London: J. & A. Churchill. 1886.

This little volume, which is a delight to handle and to read, contains the Harveian Lectures for 1885, with "a considerable amount of material which was unavoidably omitted in the lectures" as delivered, and as published in the *Lancet*. The possibility of the publication of such a book is a mark of the progress that has been made in nervous diseases, and especially of the diseases of the peripheral nerves, for until within two or three years, neuritis was a subject which occupied only two or three pages in our largest text-books, while to-day it is one of the most important of the diseases of the nervous system. After a few brief, but clear pages on the functions of the peripheral nerves, Wallerian degeneration, and the electrical reactions, the author begins with the description of cases of neuritis involving one or more nerves in gouty subjects, which he explains by the local irritation of urate of soda in the nerve-trunks. There can be no reasonable question of this form of neuritis in the gouty, although, naturally, it is a form that the American neurologist rarely meets. In this, as in all forms, the author states that any one of the typical symptoms — pain, numbness, muscular atrophy, or reaction of degeneration — may be absent.

Coming to the multiple forms of neuritis, he states that "there is now ample evidence that a more or less widely spread paralysis may depend upon a degeneration of the nerve-fibres themselves, most pronounced towards the periphery, and independent of any recognizable change in the nerve-centres or roots," which seems to us to be as absolutely proven as that paralysis may result from a lesion of the cord or of the internal capsule. "Such cases may occur in connection with chronic alcoholism, diphtheria, enteric fever, syphilis, tuberculosis, and apparently the widespread disease of Japan, called Kakké or Beriberi, is an endemic form of the same affection. There is some reason, too, to think that exposure to cold, which is a frequent antecedent, may be a factor in the production of the disease."

The author, however, omits to describe that form of multiple neuritis which is not connected with any of the diseases mentioned, and which, as a rule, is of a more acute character, closely resembling an acute infectious disease. Dr. Buzzard seeks to explain the fact of the limitation of the morbid changes to the peripheral portions of the nerves by a toxic influence upon the vaso-motor centres in the cord, diminishing the blood-supply to the nerves. He then gives a clear and correct account of the symptoms of multiple neuritis and of Beriberi, and of the alcoholic form, which, of late, has attracted so much attention. In this form, the prognosis, he thinks, is extremely grave, the muscular atrophy is more pronounced, and there is often much mental disturbance. In alcoholic paralysis, too, there is one symptom which he considers as characteristic of alcohol as wrist-drop is of lead, namely, foot-drop, and when it is present, the question of abuse of alcohol must always be investigated. As regards syphilitic neuritis, his experience as to its frequency has been somewhat different from our own, for he lays but little stress upon it. He justly considers diphtheritic paralysis to be of peripheral origin, and quotes a number of interesting cases. In the section on diagnosis, especial stress is laid upon the differentiation of the alcoholic form from locomotor ataxia, and upon the danger of confusing neuritis and anterior poliomyelitis. The prognosis, after the acute stage, with its dangers to the cardiac and respiratory apparatus, is usually good, except in the alcoholic form. Here, after apparent recovery, further excess may bring on a fatal relapse. The treatment recommended is either symptomatic, or directed against the primary disease. Later on, he advises massage and galvanism. P. C. K.

Materia Medica and Therapeutics. By Charles D. F. Phillips, M.D. Philadelphia: P. Blakiston, Son & Co. 1886.

This volume, of more than one thousand pages, is devoted chiefly to remedies found in the vegetable kingdom; about two hundred pages are given to a consideration of organic compounds and drugs derived from the animal kingdom.

The work is a revised and almost entirely rewritten edition of "The Vegetable Kingdom," by the same author, and completes the treatise on materia medica, the earlier portion of which, on inorganic substances, was published in 1882.

The classification of the drugs derived from the vegetable kingdom is a botanical one and many things are well and briefly outlined which are not found in some of the other treatises on therapeutics. Much care has been taken to arrange the subdivisions of each subject in a way to promote clearness in exposition and to facilitate ready reference to such portion of any subject as the reader may wish to consult.

The most recent remedies are mentioned and receive such consideration as their worth justifies.

In this work there is much to recommend, but it is not pre-eminently superior to the books which we already possess and does not give a more careful and judicial summary of what is known in therapeutics than may be found in other treatises on this subject.

A Manual of Dietetics. By J. Milner Fothergill, M.D., Edin. New York: Wm. Wood & Co.

In the short preface to this book the author says: "The time, indeed, is at hand when systematic lectures on Food will be a part of medical education; while the value of feeding in disease is admitted to be as important as the administration of medicines." On this text we have a book of some two hundred and

fifty pages in which the physician will find much of profit, although something of repetition.

The first part treats of the processes of digestion, and the different forms of food with their preparation, and many a practitioner will here find some useful hints not only for his patient's diet but for his own table.

The second part includes a detailed account of the best dietary for various acute and chronic diseases, from indigestion to diabetes; the need is also shown for a diet which must be varied to correspond to the different stages of development of man from infancy to old age. The book is a valuable contribution to an important subject, and it is a pity that there is no index to make its contents more easy of reference.

The Management of Labor and the Lying-In Period. A Guide for the Young Practitioner. By HENRY G. LANDIS, A.M., M.D. 12mo. pp. 334. Philadelphia: Lea Brothers & Co. 1885.

This book was intended by the author as "a guide to practice, divested of all superfluous or irrelevant details"; in short, a treatise for the physician who thinks he has not time to consult larger and more comprehensive works. It seems to us that if the young practitioner has been well instructed, he will have no use for the class of books to which this belongs, as they contain nothing not found in the larger treatises he is presumed to have used as a student: if, on the contrary, he feels the need of systematic teaching, he would do well to seek it in one of the schools of post-graduate instruction or in the standard works of great masters. It should be said of this book, however, that it is one of the best of its kind: the teaching is sound in the main and in accord with modern practice. The book is clearly written and well printed, and we doubt not will prove serviceable to many busy general practitioners.

— The practised giver of testimonials can always find something gratifying to say of any article submitted for his approval. For instance, the hero of the Lady Franklin Bay expedition, who experienced slow starvation for several months, writes to the proprietor of a canned food: "I regretted that a larger quantity had not been taken by me."

— During the late war, at a period when the success of the Union cause was pretty well assured, President Lincoln was invited by some distinguished engineers of the army to inspect a plan which had been drawn for a very elaborate and expensive system of defence for the city of Washington. After examining the drawings attentively he inquired what was the necessity for the works. "The defence of the capital," was the reply, "in the contingency of a Confederate invasion." The president thereupon was reminded of a story of a debating society of a Western town, where the question was discussed "Why does a man have breasts?" Several nights of debate failed to elucidate the problem until the matter was submitted to a referee who decided "that if under any circumstances, however fortuitous, or by any chance or freak, no matter of what nature or by what cause, a man should have a baby, there might be breasts to nurse it."

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THE STATE BOARD OF HEALTH TO INVESTIGATE RAGS AS CONTAGION CARRIERS.

THE subject of the danger to public health through the medium of rags, foreign and domestic, employed in the manufacture of paper, is one which, as our readers are aware, has received a large share of the attention of sanitarians (and we may perhaps add, of speculators in patents for disinfecting appliances) during the past few years. The somewhat protracted series of hearings on the subject before the joint committee on Public Health of the Boston City Government has been concluded, and the committee has reported at considerable length to the Board of Aldermen.

The committee reach the conclusions that the existing regulations of the Board of Health should be modified so as to allow the admission of foreign rags into this port without special treatment when collected in countries where contagious diseases have not prevailed during the six months prior to their shipment, if accompanied by proper evidence of origin; that all other rags should be admitted without special treatment or be disinfected in such manner as the Board of Health shall determine in each instance; that all disinfection should be done under the direct supervision of the Board of Health by their duly authorized agents employed and paid by the city, and only the actual expenses of disinfection be charged the owners or consignees of the rags; that where a difference of opinion in the Board of Health exists as to the necessity or process of disinfection, the State Board of Health should be consulted, and the joint action of the two Boards shall finally determine the matter.

We shall return to this subject again in considering the full text of the committee's report.

The importance of the paper manufacture among the industries of Massachusetts makes it extremely desirable that the facts be ascertained regarding the actual occurrence of contagious diseases fairly ascribable to rags as their source of conveyance. Some work of this sort was done in England by Dr. Bristowe in 1866; and in 1882 by Dr. Parsons, which was published in the supplements to the reports of the Local

Government Board for these respective years. It is with pleasure that we note that the newly organized State Board of Health of Massachusetts, a body especially qualified by its personnel and by the conditions of its appointment for undertaking such a work, has commenced an investigation of this subject.

Circulars have been issued within a few days, to the manufacturing companies using rags, asking for data regarding the kind and amount of rags used, and the number of persons employed in the handling of the rags prior to the time when the latter undergo boiling or chemical treatment, which of course is the limit of viability of any possible contagion that may cling to them. Questions are also asked regarding the precautions as to vaccination, the ventilation of dusting rooms and other means for protecting the health of employees, as well as regarding the occurrence of actual cases of infectious disease among the operatives.

The latter class of questions are, of course, likely to receive the most satisfactory replies through the medical profession. Hence a circular has been prepared for physicians practising in the paper towns, asking for particulars of cases of small-pox among such operatives, with any details that have been learned regarding the source of the contagion, whether from other cases in the neighborhood or with no other evident cause than the rags. Also, in regard to other infectious diseases, especially cholera, whether when epidemic they have appeared sooner or more generally among rag-workers than in the community at large. Moreover, the occurrence of locally infectious or non-infectious diseases, particularly of the skin or of the lungs, due to mechanical irritations are made the subject of inquiry.

It is obvious that investigations such as are here contemplated involve considerable difficulty. For instance, given a case of small-pox in a rag-worker, it is often hard, even if we can exclude any outside source of infection, to assign the responsibility, as between foreign and domestic rags. Most mills now mix the two varieties and it rarely happens that an employee has handled exclusively any grade or packing of rags for a period long enough to cover the period of incubation of small-pox. The only satisfactory solution of any such questions can be made at the time of the occurrence of a case of epidemic disease. In a circular issued by the State Board some months since for the reporting of cases of small-pox, one question has reference to the tracing of the disease to infection by rags. When a sufficient time has elapsed we may hope to gather some useful information by this source though in the present fortunate rarity of the disease it will be long before many cases of this sort can be collected. Meantime it is to be desired that physicians whose field of practice covers the paper-mill towns will make special effort to elucidate the etiology of all the cases of infectious disease which occur in rag-workers. Any physicians who have not received this circular can, we learn, obtain a copy by addressing the State Health Office. The manufacturing corporations also can do a good service at once to sanitary science and to their own interests, by favoring such investigations; inasmuch as the accurate determination of the limits of danger from this commodity is the best guarantee for the removal of all unnecessary quarantine interference with the important commercial interests involved.

THE HYGIENE OF HOT WEATHER.

THE excessive heat of a considerable portion of the summer is likely to injure man in two ways, first by its direct effect on himself, and second, by rendering his environment unsuitable for the promotion of the most complete health.

The most direct effect of heat on the human system is a lowering of muscular tone; this manifests itself by general muscular relaxation and vascular dilatation. Under the influence of heat the sphygmograph shows a feeble blood pressure; the capillaries are unduly filled; this is especially true of the cutaneous circulation. If the functions of the skin seem thereby, to be rendered more active (witness the increased perspiration of hot weather, and the wonderful mechanism for bodily cooling connected therewith), it is also certain that those functions are more easily deranged from heat than from cold, and it is in tropical climates that we see such cutaneous affections predominate as lichen tropicus, erythema caloricum and solare, lepra and eliphantiasis.

The relaxed condition of the bloodvessels of the alimentary canal and liver favors hyperæmias and fluxes. There is a physiological congestion peculiar to the liver in hot weather and in hot climates; this organ removes from the blood combustible material in the form of taurine and glycocol, and stores away in its cells glycogen, thus opposing over-production of heat in the economy. To this hyperæmia natural to the hot season, there is added a congested condition of the portal and mesenteric veins, hence the liability to catarrhal fluxes. Excesses in eating and drinking are sure to increase the engorgement, whence often result hepatitis, bilious diarrhœa and intestinal catarrh.

As for the action of external heat on the nervous system, if the impressionability of the reflex and seasonal centres is heightened, it is owing to the vascular hyperæmia resulting from the diminished tone, and neither the nutrition of the nerve centres, nor their capacity for the performance of function is up to the level of completest efficiency. Hence the languor which is experienced in hot weather, the difficulty in the execution of mental tasks, and the often disturbed sleep; in fact it is a matter of common observation that the sleep of summer is less in amount and less profound than that of winter. Excessive heat has been known to cause meningitis, and exposure to extreme heat certainly predisposes to cerebral affections. It is worthy of note in this connection that in some experiments of Claude Bernard the long-continued application to the heads of animals of heat a

few degrees above the temperature of the body was sufficient to induce attacks of acute meningitis.

As far as the respiratory function is concerned, it has been proved that a high temperature determines a more feeble consumption of oxygen and a diminished excretion of carbonic acid, hence it is that the conditions for the production of organic and voluntary force are less completely realized in hot than in cold weather.

The second way in which an elevated temperature can injure man is indirectly, by making his environment unwholesome. The summer is the season when decompositions are rife and the atmosphere is pervaded by mephitic vapors, and bacteria of both benign and morbid kinds abound. The air, moreover, rarefied by the heat, contains less oxygen than cold air.

Not to mention pestilential diseases frequenting certain localities (the grave bilious fevers of Madagascar, the yellow fever of the delta of the Mississippi, the cholera of the banks of the Ganges, the malaria of some parts of our own country), it is a common experience that a large part of the duties of sanitary boards consist in the endeavor during the hot months to render the atmosphere of our crowded cities less unwholesome, and this, by suppressing some of the multitudinous foul sources of contamination.

The hygiene of hot weather may be summed up in a few words. There is a diminished demand for, and diminished ability to digest, food, hence the indulgence of the appetite should be moderate. Foods should be chosen which give the maximum of nutrition with the minimum of work on the part of the digestive organs. An excess of fats deranges especially the stomach, an excess of sweets and proteids the liver; alcohol congests the entire portal system. A moderate allowance of fresh meats or fish, bread, succulent fruits and vegetables with milk, cocoa, tea and coffee seems to be the most judicious dietary, and all late suppers and supplementary lunches are to be avoided.

The habit of eating ice-creams and drinking ice-water at all hours is to be deprecated. Over indulgence in ice-water has produced not a few attacks of nausea, indigestion, diarrhœa and syncope, and has even caused death. Bottle-fed infants are especially liable to suffer from indigestion during the hot weather, not only on account of the depressing effect of heat on the vital functions, but from the difficulty of obtaining milk of a pure quality (at least in cities), and of keeping the bottle scrupulously clean; here we often witness the triumph of pancreatized milk, so much praised of late by leading authorities in Pædiatrics.

As the muscular and nervous systems are enfeebled by excessive heat, the propriety of great moderation in labor both of body and mind is obvious. At this time of the year, common sense and sound physiology dictate to denizens of the town the propriety of spending a season at the beach or among the mountains; the benefits of such a sojourn are too universally known to need insisting on.

The importance of frequent cold ablutions is also everywhere recognized. By judicious cold douches, cold baths and especially sea bathing the tone of the voluntary muscles and bloodvessels is promoted, visceral congestions are relieved, the general blood distribution is equalized, and the functions of the skin are favored.

Many a literary, business and professional man keeps himself in trim for hard work (which during the hot season he is unable to shirk) by the invigorating effects of cold bathing, with just enough exercise in the cool of the day to keep the muscles in a fair state of nutrition and tonicity.

Lastly, it is the plain duty of every man to do his utmost, by attention to the cleanliness of his premises, and removal of all sources of foul smells and rank emanations (which, if they are not the bearers of disease germs, may yet poison the air of respiration and disturb digestion), to make his surroundings wholesome to himself and others; to provide for himself a plentiful supply of pure air and water; and keep the apartments in which he spends most of his time thoroughly ærated and if possible cool. Such are some of the rules pertaining to the hygiene of hot weather; they are not, however, applicable to all classes of society, such as the pork-and-bean-fed haymakers on the salt marshes, or even to physicians at the fashionable watering-places.

THE HEAT CENTRE.

AT the recent session of the Helvetian Society of Natural Sciences at Geneva, Professor Girard gave an interesting account of some late experiments of his in Schiff's laboratory to ascertain the location of the heat centre. These experiments which were made on hares, have led him to conclude that the cerebral centre of thermogenesis is the corpus striatum. Every lesion affecting this body in its median part produces a pronounced hyperthermia, which does not result from spasm of the vaso-constrictor nerves of the skin, but from an augmentation of caloric production. Electric excitation of this region, which is followed by a marked augmentation of heat, justifies the assertion that the hyperthermia is a phenomenon of excitation and not of paralysis. Moreover, after puncture and irritation of this region of the cerebrum, there was a considerable increase in the quantity of nitrogen excreted in the urine, indicating an acceleration of the organic combustions; this was accompanied by notable emaciation of the animal. Girard considers the thermogenetic centres as including not only this median portion of the striate body on both sides, but all the subjacent parts to the base of the brain. There is here, according to him, an apparatus whose excitation increases the production of animal heat and which probably concurs under physiological conditions to regulate heat productions. In answer to the question, "Is the artificial hyperthermia thus obtained identical with fever?" he answers, No. Augmented heat production and diminished heat emission — such in his

view, are the two necessary factors of that pathological calefaction which constitutes fever. But the last of these factors was wanting in his experiments.

DR. OLIVER WENDELL HOLMES.

(PHŒBO ANTE ALIAS DILECTUS.)

All the friends and admirers of Dr. Oliver Wendell Holmes — and among them we know all the readers of this Journal may be counted — will rejoice at his safe return to his native land and his own home after an absence of four months, most of which time has been passed in England. The return voyage was happily completed upon the seventy-seventh birthday of our honored colleague and fellow-citizen. The added year seems to be borne with the elasticity to which we have so long been accustomed, and even the new honors heaped upon the Autocrat have failed to bend his erect figure. Oxford, Cambridge and Edinburgh have all three bestowed distinguished honorary degrees upon him, and the many other marks of respect and appreciation of which he has been the recipient were well merited and well and gracefully bestowed. He must indeed be a churlish chauvanist who begrudges either them or the pleasure which they have given. There is no truer American and none more devoted to the best interests and highest standards of his own country than Dr. Holmes, as the past fifty years of his life and work may prove to any one who considers them.

On the anniversary of the battle of Bunker Hill, and the anniversary of the death of Addison, the orator of the day in the Senate House of old Cambridge, when conferring upon this American the degree of Doctor in Letters, after referring to him as one who "Phœbo ante alias dilectus" had received from Apollo both the gift of medical learning and those of eloquence and soul, concluded his felicitous Latin in the following words:

"Videor mihi vatem quendam canentem audivesse, illum cujus in corde æstas æterna floreret, non vocandum esse senem. Equidem juventutis perpetuæ fontem illum quem trans æquor Atlanticum, Hispanorum nautæ frustra quærebant, nautam hunc feliciorem, non fabulosas inter insulas sed Academicæ juventutis in amore perpetuo, in amore mutuo, invenisse crediderim. Trans occidentis amplum illum sinum, levi phaselo vectus, diu naviget; nautili illius ritu, quem versibus tam pulchris descripsit, indies 'per ampliora ad altiora' tendat. Suam Academiam, per tot sæcula feliciter conservatam, intra paucos menses carmine sæculari iterum celebret, diuque superstes ipse exornet; nostræ denique Academiæ honoris causâ adscriptus, diu et nostrum et totius litterarum reipublicæ ad fructum floreat, vigeat, valeat, litterarum doctor, Oliver Wendell Holmes."

In due time, perhaps, Dr. Holmes's travels may bear fruit in print, and we will wait patiently to know whether he found "that Englishman precisely like himself," for has he not said: "I have no doubt each one of us has somewhere our own facsimile, so like in all things, except the accidents of condition, that we should love each other as a pair of twins if our nature could once fairly meet. I know I have my counterpart in some State of this Union. I feel sure that there is an Englishman somewhere like myself — I hope he does not drop his H's."

MEDICAL NOTES.

— The Spanish Ministry of Justice has arranged for the establishment in Madrid, Barcelona, and Seville, of laboratories of forensic medicine. After the middle of September, analyses which may be ordered by magistrates will be conducted in the new institutions — a provision enabling experts nominated in the interests of accused persons to be present during the performance of such analyses.

The *Nation* tells an excellent New Haven story of a Hartford business man so anxious to get back to work after his mid-day dinner, that he asked his guest "whether he would mind eating his pie in the street." It being a "New Haven story," the scene is perhaps necessarily laid in Hartford, but there is, unfortunately, good reason for believing that the *locus* of the story could be with truth extended pretty widely over the country.

— Mr. Thomas Smith, of England, recently performed successfully the supra-pubic operation of lithotomy, and removed a stone weighing twenty-four and a half ounces. This was claimed to be the largest stone that had been extracted during life, but in the *Lancet* of January 16th last, Dr. W. B. Hunter, of Londonderry, reported a case of calculus weighing twenty-five ounces, removed by Joseph Hunter, M. L. S., from a native in the Madras Presidency. The patient lived three days. Mr. Smith's patient recovered.

Mr. Reginald Harrison exhibited at the late meeting of the Surgical Section of the British Medical Association, a uric and calculus removed *supra pubem*, and requiring obstetric forceps for its extraction. The size was not given, though Mr. Harrison stated it to be the "largest on record."

— At the last Manchester Assizes in July, says the *Lancet*, a solicitor and a builder were sentenced, the former to ten and the latter to seven years' imprisonment for arson. In December last they took a shop in Hulme, fitting it up as a cigar shop, but not living upon the premises. The stock was valued at about £2 10*s.* and the fixtures were of the thinnest wood, and under the counters were large quantities of shavings. They insured the stock and fixtures for £950 in April last, and in the night of the 19th of June a fire broke out, and on the arrival of the fire-brigade, there were found to be three distinct fires in different parts of the shop and house. The two firemen who first entered were nearly suffocated by a dense white smoke, and applied to Mr. Heslop, Divisional Surgeon, Man-

chester police force, a day or two after, complaining of a rawness of the throat and chest, very different from anything they had experienced before. On account of what they told, Mr. Heslop burned some phosphorus in their presence, and they at once recognized the smell. Some phosphorus was then placed in some shavings, and it ignited spontaneously in about eight or ten minutes, and in sawdust in about twenty minutes. The gas-pipes had been cut, and the ends joined with India rubber tubing. The defence was that there was no evidence that the prisoners were the men who set fire to the place.

Miscellany.

THE FRENCH ACADEMY'S REPORT *vs.* LIQUORS AND LIQUOR SALOONS.

THE French Academy of Medicine has recently taken action respecting the alcoholization of wines, adopting the report of a committee appointed to inquire into the public danger from the use of the wines of commerce. The government is urged to take the strongest measures to prevent the introduction of artificially alcoholized wines into France. The report also calls for a large reduction in the number of wine shops, and for a rigid enforcement of the laws for the suppression of drunkenness.

THE OFFSPRING OF THE BLIND.

MR. SIMEON SNELL, writing in the *British Medical Journal*, August 7, gives the results of investigations undertaken to ascertain the influence upon the offspring of the marriage of the blind. In every instance, to inquiries as to sight and the formation of the eyes of the children, he was assured that vision was perfect and the ocular condition normal. A similar answer was returned to questions respecting hearing and bodily deformities. The latter were absent, and hearing was always stated to be good.

The results obtained are somewhat at variance with those recorded by other observers. Magnus investigated fourteen instances of married couples in whom one or both were born blind, or became blind at an early age, and found that, out of thirty-four children begotten of these marriages, eight, or 23.5 per cent., were either blind or weak-sighted.

He mentions, moreover, that a man who had lost his sight by blennorrhœa neonatorum had two children affected with microphthalmus. Fuchs states that he was acquainted with a physician who had congenital microphthalmus of right eye, and whose father had lost an eye by irido-cyclitis, when a child. He says, also, that the connection of the eye-disease between father and child is indubitable, for Deutschmann obtained analogous results in his experiments on animals.

The author gives in tabular form the facts regarding the various families, sixteen in number, in which his inquiries were made.

He properly admits that the numbers are too small to be anything else than an instalment to an interesting inquiry. As to the case of retinitis pigmentosa, no evidence was elicited of children suffering from nyctalopia.

Another point will hardly escape notice, and that is the small proportion of births. The experience of managers of blind institutions is that the workers are very disposed to wedlock, and this notwithstanding that, in consequence of the small wages they can necessarily earn, marriage is, at all events in some places, discouraged.

Of those couples who were both blind, after excluding the recently married, there are three, and only one has children (two). One young man has had two blind wives, and neither has borne children to live; triplets by the first wife died immediately after birth. There are ten men with sighted wives, and, excluding one whose wife had ceased to bear children before his blindness came on, there are left nine, with twenty-six children between them, or less than three per family. Adding to this number the three blind couples with two children, there are a total of twelve, with twenty-eight children, or two and one-third per family. It would almost seem, therefore, that, though prone to marry, such marriages are less than usually fruitful. Farr placed the number of children per wife in England at 5.2.

POISONING BY ICE CREAM.

V. C. VAUGHAN, writes in *Science* as follows:

"No chemist certainly would suppose that the same poison exists in all samples of ice cream which have produced untoward symptoms in man. Mineral poisons, copper, lead, arsenic, and mercury, have all been found in ice cream. In some instances these have been used with criminal intent. In other cases their presence has been accidental. Likewise, that vanilla is sometimes the bearer, at least, of the poison, is well known to all chemists. Dr. Bartley's idea that the poisonous properties of the cream which he examined were due to putrid gelatine is certainly a rational theory. The poisonous principle might in this case arise from the decomposition of the gelatine; or with the gelatine there may be introduced into the milk a ferment, by the growth of which a poison is produced.

But in the cream which I examined, none of the above sources of the poisoning existed. There were no mineral poisons present. No gelatine of any kind had been used in making the cream. The vanilla used was shown to be not poisonous. This showing was made, not by a chemical analysis, which might not have been conclusive, but Mr. Novie and I drank of the vanilla extract which was used, and no ill results followed. Still, from this cream we isolated the same poison which I had before found in poisonous cheese (*Zeitschrift für physiologische chemie*, x, heft 2) and demonstrated its poisonous properties by experiments upon cats. Moreover, by adding a piece of the solid portion of the poisonous cream, about the size of a filbert, to some normal milk, and making cream with this milk, following the details of the maker of the Lawton cream, omitting, however, all flavoring, I obtained a highly poisonous cream. Does this not prove that the poison may be produced by fermentation in good milk? A detailed account of my experiments may be found in my report to the Michigan State Board of Health."

Correspondence.

ON GLYCOGENESIS.

Mr. Editor, — In this venerable German town I read your highly instructive article on "Glycogenesis and Glycosuria" with so much more interest as I myself suffer from glycosuria. Will you allow me then to make a few remarks on one or two points in your paper about which I do not quite agree with you. You state, "Into this substance (glycogen) all the saccharine products of digestion must be converted before they are available for the uses of the organism."

Now, Mr. Editor, I feel very much like calling this sweeping assertion into question, as it is opposed to the results obtained by experiments, which have been carried on later than those of Bernard. I allude to Harley's experiments (the urine and its derangements), that led him to an entirely opposite conclusion as far as the *omnivora* and *herbivora* are concerned. Whilst Harley, of course, agrees with Bernard that *animal food* cannot be transformed into sugar (glucose) without *an intermediate stage* (glycogen) between the proteid substances on the one hand and glucose on the other, he finds in the case of *amylaceous foods and saccharine meals that there is no connecting link at all.* According to him, all starchy and saccharine foods, as they pass along the alimentary canal, are transformed into *glucose at once.* Says Harley, "The transformation of amylaceous matters into glucose during their sojourn in the alimentary canal is not the result of accident, but the sequence of an unalterable law, which is equally in force in or out of the body, so long as the physical conditions necessary for its action are in operation. Thus, if an ounce of boiled arrowroot in a test tube be mixed with a little saliva, or have added to it half a dozen drops of pancreatic juice, all the starch contained in the arrowroot will infallibly be changed into sugar in the course of a few minutes, and for this operation the intervention of no other agency than that of a temperature equal to that of the human body is required. A precisely similar change occurs in the animal organism, and the sugar thus formed is absorbed by the mesenteric veins and lacteals, and of *necessity forms part of that met with in the circulation.*"

Dr. Harley arrived at this conclusion, so opposite to the doctrine that all the sugar met in the circulation is manufactured by the liver, by finding a great amount of sugar in the blood of the *portal vein* and *chyle* of the *thoracic duct* of animals fed on saccharine food three hours after they had partaken of it. Whereas it is true, that in the case of *carnivora* there is no sugar to be found in the portal, but a great amount in the hepatic vein; in the case of omnivora sugar is met with in either of them, a fact that demonstrates that not all the saccharine or amylaceous products of digestion must first be converted into *glycogen* before they are of any use in the complex nutritive process of our organism. The *modus operandi*, how cane-sugar is converted into grape sugar (glucose) by means of the digestive juices (pancreatic juice, etc.), is at least not shrouded in greater mystery than that of the metamorphosis of proteids into glycogen and (sugar afterward) by the agency of the liver.

G. Liebmann, M.D.

Augsburg, Germany, August 15, 1886.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 21, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	736	352	33.30	16.38	20.58	.70	4.90
Philadelphia	971,363	—	—	—	—	—	—	—
Brooklyn	690,000	330	178	29.10	13.50	18.90	1.50	4.80
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	215	99	27.73	23.03	20.21	1.88	3.76
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	169	74	28.32	11.80	20.06	2.36	1.77
Cincinnati	325,000	138	69	34.31	10.22	27.01	2.19	1.46
New Orleans	238,000	120	40	31.32	15.83	16.66	—	—
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	84	37	27.37	17.85	15.47	7.14	4.76
Pittsburgh	190,000	103	68	45.59	3.88	20 37	8.73	5.82
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	71	31	28.16	14.08	22 46	2.82	1.41
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	21	7	33.32	19.04	9.52	—	4.76
Charleston	60,145	47	23	17.04	6.39	12.78	4.26	—
Worcester	68,383	19	11	42.08	10.56	36.82	—	—
Lowell	64,051	40	18	35.00	17.50	30.00	2.50	2.50
Cambridge	59,660	22	16	40.95	9.10	31.85	—	4.55
Fall River	56,803	32	22	50.00	—	43.82	2.13	2.13
Lynn	45,861	18	8	16.66	27.77	11.11	—	—
Lawrence	38,825	11	5	—	9.09	—	—	—
Springfield	37,577	—	—	—	—	—	—	—
New Bedford	33,393	11	3	45.45	9.09	36.36	9.09	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	11	—	27.27	9.09	18.18	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	12	—	16.66	16.66	8.33	—	—
Taunton	23,674	17	9	41.16	5.88	23.52	—	5.88
Haverhill	21,795	8	3	37.50	—	12.50	12.50	12.50
Gloucester	21,713	9	5	22.22	22 22	11.11	—	—
Brockton	20,783	7	3	42.84	28.56	28.56	14.28	—
Newton	19,759	5	2	20.00	—	20.00	—	—
Malden	16,407	6	2	16.66	33.33	—	16.66	—
Fitchburg	15,375	5	3	80.00	—	80.00	—	—
Waltham	14,699	5	2	40.00	20.00	20.00	—	20.00
Newburyport	13,716	8	3	25.00	—	25.00	—	—
Northampton	12,896	—	—	—	—	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,310: under five years of age 1,093: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 697, consumption 329, lung diseases 105, diarrhœal diseases 467, diphtheria and croup 82, typhoid fever 46, malarial fever 26, whooping-cough 28, measles 19, scarlet fever 18, cerebro-spinal meningitis 10, typhus fever one. From whooping-cough, Brooklyn nine, New York eight, Pittsburg six, Baltimore three, Lynn and Chelsea one each. From malarial fevers, New Orleans 13, New York eight, Brooklyn and Baltimore two each, Providence one. From scarlet fever, New York six, Pittsburgh four, Cincinnati, three, Boston two, Brooklyn, Providence and Taunton one each. From measles, New York 10, Nashville two, Brooklyn, Boston, Baltimore, Cincinnati, Pittsburgh, Cambridge and Salem one each. From cerebro-spinal meningitis, New York and Nashville two each, Boston, Baltimore, New Orleans, Worcester, Taunton and Gloucester one each. From typhus fever, Cincinnati one.

In the 21 cities and greater towns of Massachusetts, with a population of 957,625 (population of the State 1,941,465), the total death-rate for the week was 23.50 against 24.56 and 25.02 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending August 7th the death-rate was 19.9. Deaths reported 3,472: infants under one year of age 1,373; acute diseases of the respiratory organs (London) 148, diarrhœa 657, measles 62, whooping-cough 55, scarlet fever 43, fever 38, diphtheria 13, small-pox (Liverpool) one.

The death-rates ranged from 10.0 in Halifax to 31.4 in Leicester; Birmingham 16.2; Hull 10.4; Leeds 22.5; Liverpool 21.6; London 20.4; Manchester 24.4; Newcastle-on-Tyne, 16.8; Nottingham 16.8; Sheffield 16.4; Sunderland 19.6.

In Edinburgh 19.3; Glasgow 20.6; Dublin 17.6.

For the week ending August 7th, in the Swiss towns, there were 23 deaths from diarrhœal diseases, consumption 22, lung diseases nine, whooping-cough four, erysipelas, diphtheria and croup each two.

The death-rates were: at Zurich 19.1; Geneva 13.1; Basle 17.0; Berne 16.0.

The meteorological record for week ending August 21, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Aug. 21, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...15	29.981	65.7	75.9	57.9	56.0	30.6	58.0	48.0	N.W.	N.W.	N.W.	13	10	4	C.	C.	C.	—	—
Monday,...16	29.905	67.5	76.7	56.5	58.0	50.0	80.0	62.7	N.W.	S.	S.	2	15	16	F.	O.	R.	—	—
Tuesday,..17	29.875	70.9	76.7	57.2	87.0	77.0	85.0	83.0	N.	S.E.	S.	15	10	2	O.	C.	O.	—	—
Wednes..18	30.138	61.8	64.6	56.2	73.0	66.0	85.0	74.7	N.E.	S.E.	S.	4	10	6	C.	F.	C.	—	—
Thursday, 19	30.242	61.5	69.3	57.1	77.0	74.0	84.0	78.3	W.	S.E.	W.	6	16	4	C.	C.	C.	—	—
Friday, ...20	30.330	61.6	67.2	55.7	76.0	62.0	66.0	68.0	N.W.	S.E.	S.W.	5	13	6	C.	C.	C.	—	—
Saturday, .21	30.256	62.0	69.7	55.2	68.0	66.0	73.0	69.0	W.	S.E.	S.	1	12	4	C.	C.	C.	9	0.48
Mean, the Week.	30.104	62.9	70.6	56.4				69.1											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 21, 1886, TO AUGUST 27, 1886.

WOODHULL, A. A., major and surgeon. Granted leave of absence for fourteen days, to take effect on or about September 1, 1886. S. O. 197, A. G. O., August 25, 1886.

TAYLOR, M. K., major and surgeon. Leave extended one month. S. O. 195, A. G. O., August 23, 1886.

LANDERDALE, J. V., captain and assistant surgeon. Granted leave of absence for two months, with permission to apply for one month's extension, when his services can be spared. S. O. 195, A. G. O., August 23, 1886.

GANDY, CHARLES M., first lieutenant and assistant surgeon. On expiration of his present leave of absence, relieved from duty in the Department of the East and assigned to duty in the Department of Texas. S. O. 195, A. G. O., August 23, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING AUGUST 28, 1886.

CLARK, JOHN H., medical inspector. Ordered to special duty Portsmouth, N. H., and Widow's Island.

KINDLEBERGER, D., medical inspector. Ordered to hospital, Washington, D. C., October 1, 1886.

GIHON, A. L., medical director. Ordered to hospital, Mare Island, Cal., October 15, 1886.

ROBINSON, SOMERSET, medical inspector. Detached from hospital, Mare Island, Cal., October 15, 1886, and wait orders.

SPEAR, J. C., medical inspector. Ordered to naval laboratory, New York, September 28, 1886.

BLOODGOOD, DELEVAN, medical director. Ordered to hospital, Norfolk, Va., September 29th, 1886.

TAYLOR, J. Y., medical director. Ordered to naval laboratory, New York, September 29, 1886.

DEAN, R. C., medical director. Detached from naval hospital, New York, and wait orders.

SIMON, W. J., surgeon. Detached from United States Steamship "Constellation," for special duty at Naval Academy, Annapolis, Md.

HENRY, C. P., assistant surgeon. Ordered to hospital, Philadelphia, Pa.

FITTS, H. B., passed assistant surgeon. Detached from hospital, Philadelphia, Pa., and wait orders.

STONE, E. P., assistant surgeon. Ordered to Receiving ship, "New Hampshire."

SOCIETY NOTICE.

GYNÆCOLOGICAL SOCIETY OF BOSTON. — The next regular meeting of the Society will be held at the Medical Library Rooms, No. 19 Boylston Place, on September 9th, at 4 o'clock, P. M. Papers: Dr. J. E. Kelley, "The Ethics of Abortion as a Measure in Legitimate Practice." Dr. W. Thornton Parker, "The Removal of a large Vaginal Tumor."

H. J. HARRIMAN, *Secretary*.

BOOKS AND PAMPHLETS RECEIVED.

Annual Announcement of the New York College of Veterinary Surgeons and School of Comparative Medicine. Session 1886–87. New York. 1886.

Pennsylvania State Board of Health; Report of Organization and Minutes of First and Second Meetings, July 3 and November 11, 1885.

The Diseases of the Prostate, Their Pathology and Treatment, comprising the Jacksonian Prize Essay for the Year 1860. By Sir Henry Thompson. Sixth Edition. Philadelphia: P. Makiston, Son & Co. 1886.

Spasm in Chronic Nerve Disease. Being the Gulstonian Lectures delivered at the Royal College of Physicians of London, March, 1886. By Seymour J. Sharkey, F.R.C.P., etc., etc. London: J & A. Churchill. 1886.

A Reference Handbook of the Medical Sciences. Embracing the entire range of Scientific and Practical Medicine and Allied Science. By Various Writers. Vol. III., Fac to Hys. 813 pages. Illustrated by six chromo-lithographs and 718 fine wood engravings. Edited by Albert H. Buck, M.D. New York: William Wood & Co.

The Relation of Hospitals to Medical Education. By Charles Francis Withington, M.D. Being the Boylston Medical Prize Essay for 1886. Boston: Cupples, Upham & Co. 1886.

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Original Articles

THE TREATMENT OF LATERAL CURVATURE.[1]

BY EDWARD H. BRADFORD, M.D., OF BOSTON.

The principles of treatment of any disease depend largely upon the theory of causation. This is particularly true of lateral curvature, and it is for this reason impossible in dealing with the subject to avoid referring to the vexed question of etiology. Although many other theories have been advanced, it may be accepted as more than probable that the distortion is the result of superincumbent weight pressing upon a weakened spinal column, held in a position out of the vertical line. This view is supported by clinical facts as seen in a series of cases of varying grades of severity; by the fact that in early cases the deformity disappears when the weight is removed from the spinal column (by recumbency or suspension); by the obser-

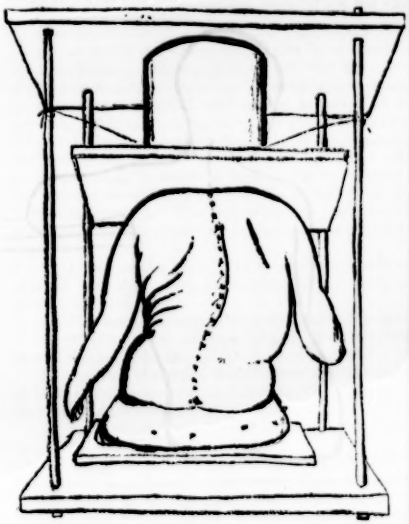


Fig. 1.

vation that in quadrupeds where the spinal column is horizontal lateral curvature does not occur.[2] Pathological specimens would also confirm this view, and the results of experiments demonstrate the fact that lateral curvature can be produced by downward pressure[3] (Fig. 1).

No better illustration can be furnished than the accompanying specimen from the Warren Museum, which shows the effect of weight falling upon a weakened skeleton. The lower extremities and the spinal column have bent under their load, while the long bones of the upper extremity, which have no weight, have remained straight (Fig. 2).

That weight rarely falls in a vertical line on the spinal column an inspection of figures in action makes evident (Figs. 3 & 4), as well as an examination of the exact modelling of the antique statues, notably the Borghese Achilles, the Farnese Hercules, the Dying Gladiator, the Germanicus. In fact the spinal column is rarely, if ever, in a vertical position; and the superincumbent weight would induce a deviation to the right or left, varying in extent in different attitudes. Whether the curve should be a long upper with a short lower curve, or the reverse, or compensating curves of equal size, will depend partly upon the favorite attitude, and partly without doubt upon the power of resistance of certain parts of the spinal column.

The treatment of lateral curvature should vary according to circumstances of the case, and largely according to the stage and degree of the affection. It is manifestly as irritational to incase in a stiff corset,



Fig. 2.

certain to promote muscular atrophy, a trunk dropping to one side from a want of muscular development, as to attempt to correct a fixed curve with osseous change by muscular exercise. Cases should be treated according to the indications. Bearing in mind the factors which cause the distortion, the aim of treatment would be,

1st, To remove the superincumbent weight.

2d, To develop the strength of the structure of the spinal column.

3d, To keep the spine as far as possible from deviating from the vertical line.

The two means for accomplishing the first are recumbency and suspension, and they can only be employed as adjuncts. For it is manifest that it is impossible to make quadrupeds of patients, or to imprison them to a couch during the growing years, or

[1] Read at the annual meeting of the Massachusetts Medical Society June 9, 1886, and recommended for publication by the Society.
[2] Berl. Klin. Wochenschr., May 17, 1886.
[3] Boston Medical and Surgical Journal, March 16, 1886.

until danger of the yielding of the spine has entirely past. Suspension is evidently only of temporary assistance. Little or nothing can be done by drugs in the way of strengthening the tissue of bone. The distortion, however, is essentially one of childhood, beginning in the majority of cases at from seven to ten years of age,[4] and in the process of growth the bone will gradually develop to the normal strength. A great deal, however, can be done towards maintaining a proper position of the spinal column, and it is in this direction that the chief efforts in treatment should be directed.

There are three methods worthy of consideration, namely:

The postural,
The gymnastic, and
The mechanical.

The postural treatment is that method where correction is sought by instruction in proper attitude. As



FIG. 3.

a raw recruit is taught the position and carriage of the soldier, so children are to be drilled into standing and walking erect. This method is suited for the simplest cases. To be thoroughly carried out, it requires that the patient should daily be exercised in walking, standing and sitting properly for a specified time under the direction of some competent person. The back should be bared, and any deviation from the proper position in standing, sitting and walking should be carefully noticed. When resting during the hour of drill the patient should remain incumbent. After the drill is over such precaution should be taken as will prevent the persistence for any length of time of a faulty attitude. This should not be done (out of the drill time) by constant correction, but by the proper arrangement of the play hours, a supervision of the chairs when reading and studying. Walking, running and active games should be encouraged. Reading, except in proper position, should be discouraged. A certain amount of time should be given to proper rest of the back. A fruitful source of faulty attitudes in sitting is furnished by the chairs, which, not fitting the child or supporting the back properly, induce the patient to sit sideways, the trunk being supported on one tuberosity of the ischium and on one elbow. The chair which the child is to sit in for any length of time should be narrow, and not deeper than the length of the thighs or higher than the length of the legs; its back should not be above the shoulders and should be arched so as to fit in the hollow of the back; or if this is not practicable, hard cushions should be replaced on the back of the chair, so fitted as to act as a proper support. An ordinary steamer-chair, furnished with a swinging book-rest, gives an excellent and ready means of reading without great danger of improper attitude. In school it should be seen that the seats are not too far from the desks nor too high; and foot-



FIG. 4.

rests should be fitted for both feet. Counteracting a tendency to sit sideways, the desk or table should be near enough to the chair to prevent lounging. Children at home are usually expected to sit in chairs made for adults, and the chairs do not, as a rule, fit properly. In cases where great care is needed, chairs suitable to age and size of the child should be furnished.

It is not so easy to prescribe rules for the avoidance of faulty position in standing as in sitting, when the chair in a measure regulates the attitude. Standing with the weight chiefly on one leg probably results more as a matter of habit than from a unilateral muscular weakness; when it becomes habitual and instinctive, it is with difficulty corrected. Under these circumstances, the child should not be restricted in walking or active play, which give a constant change in attitude, but should, so far as practicable, be prevented from standing for any length of time.

[4] Eulenberg (Die Seitliche Rückgrat's Verkrümmungen, Berlin, 1876). Keteh, New York Medical Record, April 24, 1886.

The usual bad habits of position are as follows: standing on one leg, at too low a table, sitting in a twisted position, sleeping always on one side, with too high a pillow for the head.

In most early cases the faulty attitudes are clearly the result of muscular weakness. The growth in size has not been accompanied by a corresponding development of muscle. This condition is frequently met in rapidly growing children, and is one of the most common causes of lateral curvature. Here proper gymnastics are indicated, but they should be prescribed and carried out with much care. In cases of gravity, the children are unable to bear much exercise without fatigue. Those exercises, therefore, chiefly needed in correcting the deformity, should be the only ones prescribed. The usual class-work of the gymnasia is to be avoided, as such cases require the individual attention of a competent person, who will see that no faulty position is taken during the exercises.

Mr. Bernard Roth, of London, has devoted much time and attention to the development of proper simple gymnastics, combined with postural treatment, the efficiency of which he has demonstrated by a series of successful cases. He has pointed out that in each individual a certain attitude can be voluntarily assumed by the patient, which is the nearest approach to the normal. This attitude varies to a degree in each case. The first step in treatment should be to determine this position, which he calls the "key-note" position. All exercises should be made in such a way as to develop the muscles involved in this attitude, or while the attitude is maintained. The following are the exercises which he prescribes, varying in a measure in individual cases: —

(1) Lying on the back, arms by the side, hands supinated, very slow, deep inspirations by the nose, expirations by the mouth.

(2) The same, with arms extended above the head.

(3) Position the same as No. 1, head rotation, lateral flexion of head.

(4) Position the same, simultaneous circumduction of both shoulder-joints from before backwards, elbows and wrists extended.

(5) Position the same, one hip circumducted both ways (knees extended).

(6) Lying on back, simultaneous extension of both arms upwards, outwards, downwards, from a position of the elbows flexed and close to the trunk.

(7) Lying prone, one hip circumducted both ways, knee kept extended.

(8) Sitting on a couch, with the back at an angle of 45°, ankle circumducted in, up and out, while the toes are inward the whole time.

(9) Lying on back, with arms extended upwards by the sides of the head, flexion of both arms (surgeon resisting). (The patient's knees, flexed over the ends of the table, fix the trunk.)

(10) Patient astride a narrow table, with the arms down and hands supinated, trunk-flexion at lumbar vertebræ (patient resisting), followed by trunk extension (surgeon resisting).

(11) Patient, with arms extended upwards, leans against a vertical post with pegs on each side; these he grasps. The surgeon gently pulls the patient's pelvis forward by his hands on the sacrum (patient resisting), also pelvis rotation on its axis to right and left alternately (surgeon resisting), with the hands on each side of the pelvis.

(12) Lying on back, with head and neck projecting beyond the end of table, the head is gently flexed by the surgeon's hand on occiput (patient resisting).[5]

One merit of the method of posture and exercise is its simplicity and ready applicability by every practitioner. There is great danger of making the matter appear unduly complicated, and this is the case if an attempt be made to differentiate the different bellies of the individual muscles, on the convexity of the different curves. The fact of the matter is that the curves are the result of static laws, and that the muscles are only at fault in so far as they do not hold the trunk erect, and thus allow the superincumbent weight to fall unequally. The muscles chiefly engaged in keeping the trunk erect are the large ones of the back, the latissimus dorsi, with the trapezius and the erector-spinæ.

It is not a difficult matter to devise simple and practicable exercises to develop these back muscles. The strength of a patient's back muscles can be determined in a ready way by attaching a cord to the front of a cap tied to the head, and fastening this cord to a spring balance. The patient, seated at the proper distance from the spring balance, held firmly by an assistant, is directed to bend backwards, keeping the back straight so far as is possible, and the amount of the pull is indicated upon the dial.[6] A record of this registers any increase in the strength of the patient, and as a clinical fact, it will be found that an improvement in carriage will correspond to an improvement in the indicated strength.

The round shoulders of growing children present a typical illustration of what is termed flexible curves (Fig. 5). The deformity is clearly an exaggeration of the normal physiological curve, and due to muscular weakness of the muscles, which would hold the head erect, to which is usually added a lack of tone of the muscles holding the scapulæ back, namely, the trapezius serratus.



Fig. 5.

Round shoulders may also be secondary to the curve in the hollow of the back, lordosis, that is, the arching back of the body, which is seen in the effort to rest the spinal muscles, weak from any cause, by balancing the weight of the trunk. This is particularly noticeable in Duchenne's paralysis.

Scoliosis, lateral curvature proper, is not due primarily to muscular weakness, but as has been shown, is the secondary result of a back imperfectly supported and of improper attitudes, which are due frequently to muscular weakness, which latter presents a rational indication for treatment.

[5] British Medical Journal, May 13, 1882; and also Walsham, St. Bartholomew's Hospital Reports, Vol. XX, 195.

[6] By fastening a spring balance to the wall, and an arrangement with pulleys and cord connected to straps fastened to the patient, the actual amount of force in different movements can be estimated.

The management of cases of this sort may be described in a general way as follows:

After a careful inspection of the deformity, diagnosis as to the flexibility of the curves, and examination of the faulty attitudes, the child's height and weight should be taken, and a comparison made with the standards established by Bowditch's tables, in order to determine whether any excess of growth in height or deficiency in weight existed. It should be considered that if a child has grown with unusual rapidity, or if the height had increased without a proportionate increase of weight, greater care should be exercised in the management of the case. The patient should then be directed and taught to sit and stand and walk in as nearly a normal position as possible, and be drilled to assume this position. It should be the object of the attendant to see that all exercises taken during the exercise hour should be done without an assumption of a faulty attitude. The exercises assigned should vary in each case. In addition to those already mentioned, the following will be found of use:

(1) The patient sits facing the assistant who holds a strap passing about the patient's occiput (prevented from slipping by a cross strap around head and chin). The patient bends forward and back, keeping the spine straight. The backward movement is resisted by the assistant.

(2) Same as above, except the straps cross the shoulders.

These exercises may be carried on with a weight and pulley, or rubber exercising tubes instead of the resistance of the assistant, but the amount of force is less readily regulated. The assistant should correct any arching of the back.

(3) The patient stands facing a wall at arm's length from it; places the left hand upon the wall at the height of the chin, the hand being in a direction across the body. The patient, supported by the arm, slowly brings the face towards the arm, bending at the ankles, keeping the whole body in line; the face should be turned so that the left ear touches the hand, and the standing position slowly resumed, the body being still kept from bending at the hips.

(4) The patient stands with the heels, back and occiput against a projecting corner (of furniture or doorway), and places the elbow (the arm being flexed) as far back as possible.

(5) The patient, seated on a stool or chair, should place the feet behind, and on the inner side of, the front legs of the chair, and slowly bend sideways; the assistant, resisting on the head, determines the strain on the muscles of either side.

For children accustomed to stand upon one leg, the best exercise is to drill them to stand upon the other for a specified number of minutes, and standing on one leg to lower and raise the body, bending at the knee.

In almost all flexible cases, and in a majority of cases with commencing osseous curves, all the treatment that is required is postural or gymnastic, thoroughly carried out. In certain cases of this class, and in most of the severer cases, treatment by some mechanical aid is needed. This help is indicated in curves which may be considered as threatening, even if flexible, for gymnastics and postural supervisions are only possible for a limited time during the day, and it is desirable in such cases that at no time should faulty positions be assumed. It should, however, always be borne in mind that mechanical supports are injurious in so far as they take the place of muscular support, and therefore defeat the object to be arrived at in an ultimate cure. They should never be used to the exclusion of gymnastics.

A great variety of spinal supports, corsets and appliances for this purpose have been devised. The chief defects of most of these are that besides being cumbersome, they are not fixed in their bearing upon the pelvis, and allow the patient to lean to the side and to assume faulty positions.

If a patient with a flexible lateral curvature be examined, it will be found that in endeavoring to push the spine straight, pressure will be exerted on the right side of the back, a little below and behind the axilla, and counter pressure in the front of the trunk, upon the pelvis, just below the anterior superior spine (Fig. 6). It will also be necessary in some cases to

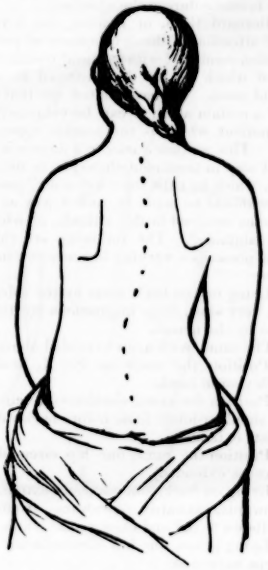


FIG. 6.

push the right shoulder down, and to pull back the right shoulder blade. Sometimes also it is desirable to push up the left shoulder. These points vary necessarily in different cases, but in the typical lateral curvature with the upper convexity to the left, they are as here indicated. Mechanical support and pressure should therefore be in this direction, and as far as possible there should be no support or pressure at any other place, and motion in every other way should not be limited, that free play of the muscles be allowed for their development.

In cases of pronounced fixed curves with marked change in bone, the matter is a different one. This condition of the spinal column is readily recognized by the fact, that the curves do not diminish when the patient is recumbent or suspended, and that rotation

is indicated by projection of the ribs when the patient bends forward (Fig. 7).

In these cases a cure that is a complete correction of the deformity is not to be hoped for; in some severe cases an arrest of the increasing curves is difficult, and all that can be done is to relieve the symptoms presented, as far as is possible. In many of these cases, plaster corsets, applied with the aid of suspension, are of assistance; or better, leather glue or silicate corsets, made from casts of the trunk in an improved condition, are of great help. Ordinary stiff corsets, or any support which constricts and steadies the trunk, will often relieve the symptoms of pain in aggravated cases.

Some of these cases are also relieved by gymnastic exercises, massage and electricity.

Two errors of prognosis are common in regard to lateral curvature:

(1) To regard the affection as of little moment, and likely to correct itself.

(2) That the affection is one of immediate gravity.

The latter view is less frequently entertained, and

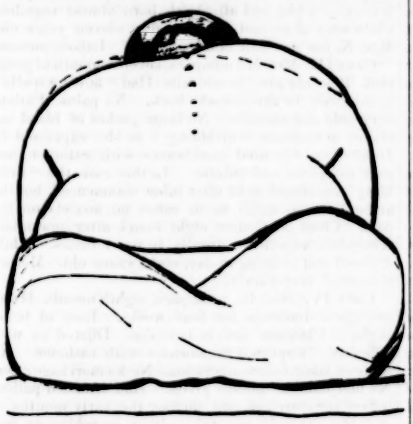


Fig. 7.

is due to a confusion of the disease with caries of the spine, but the former error is quite wide spread.

In a majority of cases of scoliosis, the curvature becomes self-limited, and a slight twist of the spine is of no great importance. This may be said of most of the diseases of childhood, but it is impossible to predict that an increase of the curvature may not take place in any given case. It is certain that no spontaneous rectification of a pronounced lateral curvature has ever been observed, while a progressive increase to a stage of permanent and incurable disability is, unfortunately, not rare. Instances are occasionally seen where a curve which has occasioned little or no trouble during girlhood and early womanhood, increases and gives rise to much discomfort after middle life. It may therefore be said that every patient with a laterally curved spine, even if not suffering from the deformity, is in danger from it of discomfort and partial disability, and that the danger is the greater the poorer the patient's health and strength.

The subject may be summed briefly as follows:

Of the two chief factors determining lateral curvature, superincumbent weight and faulty attitudes, the latter in the early stages of disease is the one which offers feasible indications for continuous treatment.

Faulty attitudes can be corrected by properly directed gymnastics and by drill.

After pronounced osseous curves have been formed, a complete correction is difficult or impossible.

Gymnastics are of great help in correcting any tendency to increase of the deformity.

The gymnastics should be carefully prescribed and efficiently carried out daily.

Proper appliances may be required, but they should be regarded as an adjuvant to gymnastics, and as a means of retention in severe cases.

The affection is one which is easily prevented, but cured with difficulty, and treatment cannot be begun too early.

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A METHOD OF TREATING PLACENTA PREVIA, SOME POINTS OF WHICH ARE NOT TO BE FOUND IN THE STANDARD WORKS ON MIDWIFERY.

BY PHANUEL E. BISHOP M. D., PAWTUCKET, R. I.

Doubtless every physician at the commencement of his practice, has looked forward with great concern to his first case of placenta previa.

When we consider the great danger to both mother and child, and the hopes and fears of the medical attendant, all cases become formidable even to obstetricians of skill and experience. Taking it for granted that every practitioner is familiar with past and present literature upon this interesting subject, I will omit from this paper all that is usually found in standard works upon obstetrics.

Very early in my practice, some thirteen years ago, my first case of placenta previa occurred. A physician of large experience saw the case with me, and confirmed my diagnosis. The method of treatment then discussed was strictly adhered to in this and seven other cases which have since occurred in my practice, or been seen in consultation.

On account of this experience, and the uniform success attending each one, I deem it my duty to present this paper to the public.

The above mentioned method of treatment can be best described by reporting my last case in detail.

On May 16th, 5 P.M., I was called to attend Mrs. B. who had nearly completed the seventh month of her fourth pregnancy. She was under my

care during her last two confinements which were normal in every respect. While quietly sitting in a chair, without any pain or other warning whatever, a profuse hemorrhage from the vagina occurred, which continued about ten minutes. It had nearly ceased upon my arrival. No examination was made at this time. She was put to bed and the precautions taken which are customary in cases of accidental or unavoidable ante-partum hemorrhage. At 10 P.M., I was called again. Another gush had taken place at 9 o'clock, which had now ceased. An examination was now made. After removing a small clot, the os and cervix were carefully examined by both touch and speculum. There was little or no dilatation of the former or obliteration of the latter. I did not try to pass my finger into the cavity of the uterus. Strongly suspecting placenta previa, the possibilities and probabilities of the case were frankly stated to the patient and family, and the former cheered up, and assured that I would safely take her through her peril. Deeming it my duty to remain for the present, I gave Mrs. B. a full dose of morphine combined with atropine, and lay down for a nap, leaving orders to be called immediately should flowing occur. In the morning I left her quietly sleeping. No hemorrhage during the night. Saw her at noon. Found her very comfortable, encouraged her, and promised to call the next day. Was summoned again the same evening at 10 o'clock. Hemorrhage quite brisk, pulse rapid, great restlessness and other symptoms alarming. I decided to do my duty at once, namely, *empty the womb and save my patient's life.* One grain of morphine combined with one-fiftieth of a grain of atropine was now put under the skin; thirty grains bisulphate quinine administered in wafer paper; the urine drawn, and the following enema given: spts. turpentine, one ounce; castor oil, two ounces; yolks of two eggs; castile soap suds, one quart thoroughly mixed. After the enema had operated, the patient was placed upon her back in the usual position for instrumental delivery. One hand was passed into the vagina, the first finger of which was gently but firmly carried into the womb, dilating the os as I proceeded. My fears were now confirmed. I was dealing with a case of placenta previa centralis. Continuing to dilate gently and rapidly until two fingers could be easily passed, I soon had the placenta separated from one side for quite a space, as far up as my fingers would reach. Taking a silver male catheter, No. 18 American scale, I now passed the curve into the uterus between the placenta and my fingers until it reached the tips of the latter. Then with a gentle rocking motion, it was carried still higher, separating the placenta as it advanced, until the upper margin of the same was passed and the membranes reached. These were now easily and thoroughly ruptured and the liquor amnii allowed to escape. Mrs. B. now received a copious douche of hot water, had her linen changed, and was placed in a clean, dry bed, in order to get a little rest before labor should commence, which I knew would not be long delayed. She went to sleep almost immediately, the pulse and respirations assuming a better character directly. After watching her for half an hour, during which time not one drop of blood escaped, I lay down to get a little rest myself. It was now midnight. I was awakened at 3.30 A.M. Pains commenced at 3. Child and placenta born almost simultaneously at 5. Child born alive premature and feeble, and lived only a few hours. Mrs. B. received a good generous diet, with Wine of Coca ad libitum. She arose on the tenth day feeling well but rather anæmic. With the exception of bisulphate quinine twice daily, she required no medicine. I will now briefly notice the other seven cases.

CASE I. Mrs. J., multipara, second child. Placenta previa lateralis. Catheter used, morphine and quinine exhibited. No pains before operation. Labor commenced half an hour afterwards. Child born dead about an hour later. Afterbirth removed with the hand. Have attended her three times since. Confinements normal.

CASE II. Mrs. N., tertipara, eighth month. Placenta prævia lateralis. Had slight hæmorrhages at different times for the past two months. Labor had commenced before my arrival. Flowing profuse, pains weak. Patient pulseless, and well-nigh bloodless. Ruptured membranes with finger. Morphine and quinine exhibited in large doses at once. Hæmorrhage ceased immediately. Pains frequent, sharp and decisive. Child and afterbirth born almost together. Child born alive, and living to-day, eleven years old. Mrs. N. has had four children since. Labors normal.

CASE III. Mrs. M., nonipara, seventh month of gestation. Placenta prævia centralis. Had "flowing spells" at intervals for three weeks back. No pains. Patient very pale and anæmic. No large gushes of blood but almost a constant "dribbling" as she expressed it. Dilated os, ruptured membranes with catheter, and gave morphine and quinine. In this case the "dribbling" continued until after labor commenced, but the amount was so small as to cause no anxiety on my part. Child born alive eight hours after operation. Afterbirth expelled naturally in ten minutes. Child did well and is living to-day, eight years old. Mother recovered very slowly.

CASE IV. Mrs. D., primipara, eighth month. Hæmorrhage at intervals for four weeks. Loss of blood slight. Placenta prævia lateralis. Dilated os with difficulty. Ruptured membranes with catheter. No signs of labor before operation. No hæmorrhage after. No morphine or quinine given. Had attended patient before her marriage and during the early months of gestation. Could not take either morphine or quinine. Labor delayed two days. Child born with forceps fifteen hours afterwards. Child did well. Mother had mammary abscess which greatly retarded her recovery. Attended her once since. No trouble.

CASE V. Mrs. A., tertipara, eighth month. Placenta prævia lateralis. Slight hæmorrhage at intervals for six weeks. In bed about all the time. Tried to carry her through to full term. Hæmorrhage suddenly becoming very alarming, and no pains, I proceeded as in Case III. Labor terminated two hours after operation. Child dead born. Mother had phlegmasia dolens. Recovery slow. Have attended her twice since. She died of phthisis six months ago one year after birth of last child, and seven years after birth of third.

CASE VI. Mrs. C., nonipara, seventh month. Placenta prævia centralis. Had been "unwell" every month since becoming pregnant. Had lost more blood than common, especially at the last two periods. Labor had commenced before I was called. Hæmorrhage steady and severe since pains began. I proceeded as in Case III. Child born alive one hour

afterwards, and lived eight hours. Mother made an excellent recovery.

Case VII. Mrs. M., multipara, third child, between six and seventh month. Was seized with hæmorrhage while out riding. She was taken home, and I attended her for accidental hæmorrhage for one week, at the end of which I made a thorough examination. Placenta prævia centralis. No pains, although the os was very soft and easily dilated. Proposed delivering her at once. Patient and family refused my proposition, as I told them the child would probably be born dead or live but a short time after its birth. I requested my dismission from the case which was granted. Saw her again in four days. Operated at once in order to save patient's life, which was in great jeopardy. Family not so anxious now as they were four days before concerning welfare of child. Conducted this case precisely like No. VIII, which is reported in detail. Child dead-born. Mother did well, far better than I thought she would.

I will close this paper with the following remarks: As it seems to me the first thing to work for, in treating placenta prævia by the above method is to secure the entire confidence of both patient and family. Perform the operation without anæsthetics if possible, for they both favor hæmorrhage and take away from the pains that force which we are so anxious to secure. Have nothing whatever to do with ergot. It is worse than useless. We never can tell how it will act. It is liable to cause the os to contract and lock every thing up just when we want to keep it open so that we can empty the womb. Don't bother with the tampon. It cannot do any harm when introduced properly, but will do little or no good, and then again we are wasting precious time. What we want, is no hæmorrhage and good effective pains. Can we secure these? I answer emphatically and without hesitation, yes. Separate the placenta from one side as far as possible. If the os is not open, dilate. Rupture the membranes thoroughly. You have now fulfilled the first indication. Morphine and quinine in large doses have in my hands always fulfilled the second. A woman lies at death's door from ante-partum hæmorrhage. There is nothing like a full dose of morphine to help her rally and get a fresh grip on life. Bedford says: "Be not afraid of this remedy, it is the sheet-anchor of hope in cases in which the patient is almost sinking from exhaustion consequent upon profuse hæmorrhage." It is also oxytocic. Narcotism is almost impossible. It is well enough to combine atropine as has always been my custom. Experience has taught me that quinine in large doses *is the oxytocic* par excellence. I have used it thus in a great many cases. In my hands it almost never fails to produce just such pains as are required. Then, again, it wards off chills, acts as a tonic and prevents septicæmia.

— An American ward of the Guild of S. Luke, Evangelist and Physician, has been recently formed in Rhode Island, Dr. W. Thornton Parker, Provost.

— The papers that hoist before the public the figures of their circulation — apt to be fathomless lies — bear the same relation, remarks a lay contemporary, to admirable journalism that John L. Sullivan, whose circulation is much greater than Oliver Wendell Holmes's, bears to that intellectual autocrat.

REPORT ON PROGRESS IN SURGERY.[1]

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

END RESULT OF CARCINOMA OF THE LIP AFTER OPERATION.

A. Wörner[2] has collected and tabulated 866 cases from Brun, Thiersch, von Bergmann, Billroth, Winniwarter, Fischer, Kocher and Partsche. His results show that

782 cases (90.4%) were in men.
84 " (9.6%) " " women.
— " (94.4%) " " under lip.
— " (5.6%) " " upper "

The average mortality was 7 per cent.; the minimum being 2.81 per cent.; the maximum 14.9 per cent., both of which results were obtained from data of the preantiseptic period. Permanent recovery occurred in 28.1 per cent., but among all cases of recurrence 87.6 per cent. occurred within one year after the operation, and cases which had escaped without recurrence for three years could, with great certainty, be considered cured. Wörner mentions one case where a secondary operation was performed nine years after the primary one, the patient surviving eleven years without recurrence.

OPERATIVE TREATMENT OF FRACTURE OF THE PATELLA.

The operative methods now in vogue are:

(1) Evacuation of articulative effusion by aspiration or puncture.

(2) Tendon ligature. (Volkmann.)

(3) Bone suture. Introduced by Lister in 1877, either open or subcutaneous, the most recent plan of which is that of Ceci.[3]

(4) Malgaigne's Hooks.

(5) Morton's Method.

Dr. Conrad Brunner,[4] of Zurich, has recently published an exhaustive and carefully-written article intended to show the comparative value of simple and operative treatment of fractures of the patella The data from which he has formed his conclusions consist of detailed histories of forty-four cases treated by the former method and statistical tables containing the essential points in ninety cases of fracture treated by suture.

The operative method being a comparatively modern procedure the final results cannot be so fully learned as those of the older plan. However, the results, as far as can be obtained, show that the opening of a knee-joint to suture a patella is entirely unjustifiable in the great majority of cases. Brunner finds that the simple method gives practically as good results and hence concludes that there is no real necessity for the operation, for the primary object of treatment is in his opinion to restore the function of the limb and not to secure bony union. And in regard to this point the operative method cannot show any better results than those obtained after the older method. Since among the cases operated upon records exist of eight cases of suppuration, two requiring subsequent amputation of the thigh, nine resulting in anchylosis, and three deaths. It can scarcely be regarded as a

[1] Concluded from p. 190.
[2] Centralblatt für Chir., No. 25, 1886, s. 432.
[3] Eine neue Operation der Patellar Fracture. Subcutane Metallnaht der Kniescheibe. Deutsche Zeitschrift f. Chirurg. Bd. xxiii, Heft. 3-4.
[4] Ueber Behandlung und Endresultate der Querbrüche der Patella. Deutsche. Zeitschrift für Chirurg. Bd. xxiii, Heft, 1-2.

method of treatment unattended by danger, and the danger thus incurred by the patient is not compensated for by a better functional result than can be obtained by a simpler method devoid of risk.

Chauvel [5] has reported forty-three cases with severe arthritis in twenty; 120 amputations and three deaths.

According to the final results now on record it seems to be unwarrantable to transform a simple fracture into a compound one, to secure bony union which does not give the patient a better functional result than is obtained in a case of ligamentous uniting of the fragments. The claim that the duration of treatment is shortened is not supported by statistics.

The conclusions to be drawn from the above are that all cases of this injury should be treated by the "simple" method, except when a free communication with the fracture already exists or where a badly united fracture or useless limb demands a more effectual treatment.

DISLOCATIONS OF THE SHOULDER.

Neil Macleod [6] describes what he terms "a new, easy, rapid and painless method of reduction of dislocations of the shoulder, without an anæsthetic," in the following terms: Let the patient lie down on his back on the floor, with the dislocated arm outstretched at right angles to the trunk, and also on the floor. Having told the patient to lie quite still and make no effort, let the surgeon, placing the approximate heel in the axilla, make traction gently and steadily at right angles to the line of the trunk; and, as there may be no jerk or evident intimation of the return of the head of the bone to its place, let him ascertain its position, if necessary, adducting the limb to make sure. This method it is claimed is painless.

TRANSPLANTATION OF BONE.

Ferrari [7] arrives at the following conclusions: That pieces of bone inserted in the diaphyses of long bones may become completely united to them, and continue to live and grow. The re-union of grafting takes place by a true vascularization, which forms between the piece inserted and that to which it is applied. Around the piece inserted, a bony, peritosteal, and medullary callus is formed, which has only a temporary vitality, and after the lapse of time the callus is absorbed and the engrafted bone can only be recognized by its greater vascularity. Complete antisepsis is essential to success. A favorable result is obtained even when the smallest pieces are inserted. Moderate pressure should be used on the engrafted bone to maintain contact between the medulla and the piece of bone transplanted.

DIAGNOSIS OF INJURIES TO THE SACRO-ILIAC ARTICULATION.

Lewis [8] calls attention to the liability of overlooking injuries to the sacro-iliac articulation. He considers the following to be the principal points in diagnosticating this injury. The history of the injury. Any force which rotates the pelvis under severe pressure, or any force which acts as a wedge between the sacrum and innominate bone, is liable to injure the sacro-iliac articulation, although it does not cause separation and deformity. The symptoms are usually associated with those of contusion of the hip, but differ in this, that the patient must lie on the back for a long period of time, the slightest lateral pressure on the pelvis being unbearable. The patient is able to be assisted to the erect posture and to move about on crutches for some time before being able to lie on either side. Many months elapse before the patient can walk with ease, and frequently the injury is permanent to the extent of rendering him unable to do any active work. The walking is peculiar, the uninjured side being used as a pivot on which to swing the pelvis, and thus save strain on the affected articulation. Dr. Lewis cites two illustrative cases of this injury.

INTRA-CRANIAL TUMORS.

The Pathological Society of London, in February, held a special meeting for the exhibition and consideration of intra-cranial tumors.[9] From a surgical standpoint, the meeting was of interest, as there was a large number of tumors exhibited, and "they illustrated the tendency of cortical gliomata to remain limited to the gray matter, and the opposite infiltrating characters of these tumors in the white substance; the rarity with which it is possible to localize with certainty the site of tumors; the difficulty of determining their size, and the extent to which they infiltrate their surroundings; the vast variety of clinical phenomena, and the variations in their anatomical and histological structure."

Dr. Goodhart considered that the number of tumors which could be removed with any probability of success was very limited.

DISINFECTION OF HANDS.

Kümmel,[10] of Hamburg, has performed an elaborate series of experiments to ascertain the best method of making a surgeon's hands absolutely aseptic. He found that contact with soiled dressings, or at autopsies, rendered this result more difficult. Sublimate, one-tenth per cent., was inefficient. The following conditions are necessary for satisfactory disinfection of hands:

(1) Five minutes' vigorous or thorough scrubbing with brush, soap, and water, as hot as can be borne.

(2) A thorough two minutes' brushing of the hands in freshly-prepared officinal chlorine water or carbolic solution, five per cent.

In operating, the fore-arm should be cleaned, as well as the hand.

REMOVAL OF MOLES AND WARTS BY ELECTROLYSIS.

Voltolini [11] uses a battery of five elements. Two kinds of needles can be used, one of platinum, the other of steel. The latter needle is intended for very hard warts, and must be attached to the negative pole to avoid oxidation. Moles and warts must be soaked in water. The needles must never be introduced deeper than the level of the skin, nor be allowed to touch one another. The action of the galvanic current may be continued from five to ten minutes at most, the needle being pushed in different directions, whilst water is allowed to drop on to the part operated on. In from two to four minutes, the substance of moderately soft warts become pulpy. This is the indication for the operation to stop. This pulp dries up, becomes black, and in a week or fortnight falls off.

[5] De la suture osseuse dans les cas de fracture transversale de la rotule avec écartement. Centralblatt fur Chirurgie, 1884, 8, 377. Referat.
[6] Brit. Med. Jour., 1886, Jan. 30, p. 195.
[7] Lon. Med. Rec., Jan. 15, 1886, p. 31.
[8] N. Y. Med. Jour., Dec. 26, 1885, p. 715.
[9] Lancet, February 6, 1886, p. 271.
[10] Centralblatt f. Chirurg., April 24, 1886.
[11] Deutsche Med. Wochen., No. 7, 1886.

TOTAL EXTIRPATION OF THE SCAPULA.

Shutz [12] has recently published the result of a case of complete removal of the scapula, the acromial end of the clavicle, and the head of the humerus for extensive caries. The result is a useful arm. His review of the subject has resulted in a collection of twelve cases, of which six (fifty per cent.) show a favorable result; two deaths, two failures (loss of arm from gangrene); two cases result not known.

Gies [13] published in 1880, a table containing eleven cases, in which the complete extirpation of the scapula, and simultaneous removal of the head of the humerus was performed. The causes for operation — caries, necrosis, fractures, gun-shot injuries, enchondroma, osteochondroma, and cancer. The results show four deaths, three within ten days, one from recurrence; four complete recoveries; one case with favorable result at end of three months; two, result not given.

AMPUTATION AT THE KNEE-JOINT BY DISARTICULATION.

In an interesting discussion at the Royal Medical and Chirurgical Society, following a paper on this subject by Mr. Bryant,[14] the following views were expressed. Mr. Bryant considered the operation of disarticulation required for its success that the disease or injury should be confined to the leg, that the condyles of the femur be involved, or very slightly affected, and that there is a sufficiency of healthy soft parts below the knee for the formation of a good stump. The cicatrix was always placed well behind the femur. The patella was preserved, its removal being found quite unnecessary. Of the three different methods of operating, namely, that of Pollock by the long anterior flap, Pick's plan by lateral flaps, and Stephen Smith's method by lateral hooded flaps, Mr. Bryant preferred Smith's method. He gave tables of thirty cases, with the results. He considered that the leaving of the semilunar cartilages *in situ* was a great advantage. The advantages of this form of operation he summarized as follows:

First. The lessened shock of operation.

Second. The lessened section of tissues, and the non-exposure of the muscular interspaces of the thigh.

Third. The escape from the necessity of sawing the femur, with attendant risks.

Fourth. The preservation of the attachments of the thigh muscles, and consequently, the greater mobility of the stump.

Fifth. The useful character of the resulting stump.

Sloughing of the flaps was considered by many of the speakers to be quite common. Early and efficient drainage for the first days was considered to be very important, for sometimes much synovial fluid was secreted.

RUPTURE OF THE LIGAMENTUM PATELLÆ.

This comparatively rare injury is considered by Henry B. Sands [15] in a paper based upon the observation of thirteen cases. He advocates a departure in our treatment of this injury from the use of mechanical apparatus designed either to prevent the knee from being bent or, to make an artificial extension by elastic force. In two cases he has operated and united the ligament and it will be of interest to record his method of procedure. A longitudinal incision, six inches in length, was made in the median line on the anterior aspect of the knee, the centre of the incision being opposite the lower edge of the patella. The cut was subsequently lengthened both upward and downward to nine inches. On exposing the injured parts, in doing which the knee-joint was freely opened, it was found that the ligamentum patellæ had been torn away from the spine of the tibia, which was now covered by only a small amount of dense fibrous tissue, sufficient, nevertheless, to allow a firm hold for sutures. A little more than an inch of the ligament in good condition, was normally attached to the patella. Before the upper end could be drawn down and placed in contact with the lower one, it became necessary to make many deep oblique and transverse incisions into the median and lateral portions of the quadriceps; and even when this had been done as far as was deemed prudent, considerable force was required to secure apposition, which was maintained by two sutures of stout silver wire. The mucous and alvar ligaments were found redundant, and were partly removed with curved scissors. The incisions in the capsule of the joint were closed by catgut sutures, and the external wound was united, except at its upper and lower ends, in the same manner. Two bone drains, one on each side, were inserted into the joint through openings made for that purpose, and one into each extremity of the median incision.

Antiseptic precautions were observed. The first four days the patient complained of pain, this was so severe that on the second day the dressing was removed and the wound was examined The drainage-tubes were cleaned of a few clots of blood, and a fresh dressing was applied. The pain after the fourth day gradually diminished and finally disappeared. At the end of seven weeks the wound was found healed, the patella movable, as was also the knee-joint. Two weeks later the patient was allowed to get up with a water-glass bandage. At the end of five months the bandage and the splint was laid aside and the knee had assumed nearly its natural size, the continuity of the ruptured parts having been reëstablished. A table of cases concludes the article.

RUPTURE OF TENDONS. TREATMENT OF DIVIDED TENDONS.

Hagar [16] has operated for a so-called spontaneous rupture of the tendon of the extensor of the longus pollicis thumb. An exploratory incision was made for the purpose of finding the divided end. Failing to discover the proximal end (on account of retraction) the distal end was cut obliquely and sutured by catgut to the tendon of the extensor indicis after opening the sheath of the latter and denuding a suitable surface by scraping of the epithelium. Under antiseptic treatment primary union followed. The operation was performed seventeen days after the occurrence of the lesion. In two months after operation extension of the thumb was nearly restored and in six months the movements of the hand were nearly normal.

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Reports of Societies.

NEW YORK COUNTY MEDICAL ASSOCIATION.

STATED meeting, June 21, 1886.

DR. EDWARD G. JANEWAY read a paper on

CERTAIN POINTS IN THE DIAGNOSIS OF SOME OF THE INFECTIOUS DISEASES.

The subject, he said, was one which did not have the merit of novelty, and although it had been suggested to him by the President of the Association, he would not have ventured to present it had it not been that for a number of years he was so placed (as one of the Health Commissioners of the city of New York) that it was necessary to give a great deal of attention to the matter, and that he was, moreover, enabled to see those circumstances which were most likely to lead to erroneous opinions, and at times to witness the sad effect of some of these.

The diagnosis of small-pox, when it presented itself with all its usual features was a matter of no special difficulty to one who had seen even a few cases; but students of medicine in this country had, unfortunately, owing to the stringent isolation and quarantining laws, but little opportunity to become acquainted with the ordinary physiogomy of this complaint. Besides, owing to the system of persuasive vaccination carried on in the city of New York, and presumably to somewhat the same extent in other cities of the country, for nine or ten years there had been comparatively little of the disease. Systematic vaccination in general, vaccination in the neighborhood where a case of small-pox had occurred, isolation or removal of the patient, disinfection of premises, and subsequent careful outlook for other cases in the vicinity, had been successful to an extent appreciated by few. But the outlook for the future he did not think so assuring, as the work of vaccination had been crippled to a considerable extent during the past year; and a large contingent of unprotected persons existed, who might become victims to, and spreaders of the disease.

Dr. Janeway had known the start of a considerable outbreak of small-pox to be traced to a single erroneous opinion. Another very unfortunate circumstance had happened which would tend to delay the prompt action desirable in dealing with the disease. The law had been invoked to inflict a penalty upon a physician who had reported a case of suspected small-pox to the Board of Health, and though an appeal had been taken which would probably be successful, yet the effect was unfortunate. It seemed to him that the case of the physician dealing with disease, and particularly with one which was dangerous to the public health, ought to be protected by law.

One of the greatest safeguards against an error of diagnosis as regards small-pox consisted in having such a classification of the disease fixed in the mind as should serve to take account of the various methods of its manifestation. In a number of the text-books important facts bearing upon the method of development of certain forms of small-pox were omitted. A satisfactory classification he had found as follows:

Purpura variolosa.
Variola-vera. Confluent.
" Semi-confluent.
" Discrete.
" Corrymbose.
" Hæmorrhagic.
Varioloid.
" Variola Varicelloidis.

The distinction between purpura variolosa and the ordinary hæmorrhagic type, where the blood is extravasated into the vesicles, should be kept in mind, and it could be best accomplished, he believed, by making such a classification as the one referred to. In his experience the failure to recognize, or even to have any knowledge of the existence of this form of the disease had led to very serious consequences. The danger consisted in mistakes between this form of the disease and the malignant type of some of the other infectious diseases, particularly measles, and, much more rarely, typhus fever, ulcerative endocarditis, and purpura hæmorrhagica.

A careful cross-examination of the patient and his friends should be made, and at the same time the possibility taken into consideration that a visit to a strange place, the getting of new clothing, etc., might in the absence of any other clue furnish one. In these days of rapid travel, with emigration to the West in that section of the country, as well as here, the recent arrival of strangers in the neighborhood should be thought of. Should it be learned that a possible ex-

posure had happened, and to a case of disease of unknown nature, it should be a part of our duty to ascertain by inspection of such sick person or by inquiring of the physician in attendance the nature of the illness.

By way of illustration Dr. Janeway related the following case: Some years ago he was called in consultation to another city to decide as to the nature of a strange variety of fever. One patient had died of it, and another was seriously ill at the time. When seen, the latter was sitting in bed, with very feeble pulse, though with only slight febrile movement, and showing evidence of dyspnœa, due to changes in the blood. He had a wet cloth on his forehead, which concealed a number of purpuric spots in the skin of that part; while on the chest, abdomen and legs these purpuric spots also existed. In one place there was a small vesicle (which was, however, of no determinate character), and at no point were there any papules or umbilicated vesicles. His mind was perfectly clear, and this was the sixth day of his illness. The hæmorrhages had only appeared in the skin of the forehead on the morning of that day, but the eruption on the rest of the body had already existed for more than twenty-four hours. Dr. Janeway suggested that the disease was in all probability purpura variolosa; in which opinion he received confirmation, *first*, by learning that this patient had attended the one who died, and had held her in his arms, the fatal issue having occurred about twelve days before the beginning of his own sickness; and *second*, by asking about the others who had been exposed during the sickness and at the funeral of the first patient. He learned that a number of these individuals were down with fever, and that one had an eruption, which proved to be discrete small-pox. The two cases with hæmorrhagic extravasation were, then, undoubtedly variola, but of a form which none of the attending physicians had previously encountered.

This case illustrated, better than any words, these three points to be considered in establishing a diagnosis:

First. It is important to know the nature of the disease from which a malignant case, not itself possessing positive features, has developed.

Second. Should the patient have died, this may be done by an investigation of others exposed to the originating case; these having perhaps a milder and more characteristic type of the malady.

Third. The result of exposure to the malignant case may, in some instances, be a proof of the nature of the disease.

In other words, we must take into consideration what gave rise to the disease in question, and what has been produced by it. Even in a large city, and in the case of homeless tramps, a rigid inquiry and cross-examination could do much toward throwing light on these cases. What he wished to emphasize was, that we must not be content to simply consider the eruption and the patient's condition, but must use every means in our power to establish a correct opinion as to the nature of the disease producing this state, which is denominated purpuric or malignant. It was a great mistake to suppose that hæmorrhages from mucous surfaces, a previous diffused scarlatinal-like rash, or maculo-papules becoming flattened purpuric spots, are necessary accompaniments of this type of hæmorrhagic variola. Variations from this form which he had described were met with, up to that in which characteristic spots of small-pox eruption occurred. Dr. Janeway here introduced another case to illustrate the necessity at times of making an autopsy to decide the nature of a doubtful disease. It was one in which an irregular case of small-pox was mistaken by the attending physician for cerebro-spinal meningitis; and two weeks after the death of the patient, a gentleman who had been with her during her illness and had refused vaccination subsequently, because he thought the disease was not variola, sickened with, and died of confluent small-pox.

The mistake between scarlatina and small-pox happened in those cases of variola in which a marked red efflorescence first occurred, followed by darker spots and papules, and finally by vesicles. In some cases petechiæ appeared in places, and hæmorrhages followed; and not infrequently, in severe cases, he had seen the vesicles first on the inner sides of the thighs and in the axillary space, the face remaining free. As the throat might be sore at this time, a mistake might occur were the order of events not kept in mind, which was two or three days' sickness, and then the rash and sore throat and mouth, due to the eruption. A mistake which he had known to be made was to consider the vesicles in such a case as sudamina. One point was to be carefully borne in mind, namely, that an examination which left out an inspection of the abdomen and chest, and particularly of the inguinal and axillary regions, would be very apt to lead to a mistaken opinion in the case of a severe infectious disease.

The mistake as regards measles occurred in a two-fold manner. On the one hand, the first stages of the small-pox eruption, prior to the formation of the vesicle, led one who looked hurriedly at a case, and did not consider the invasion symptoms, to speak of measles. The other mistake occurred to one who looked at a severe case having the skin red, and in it a number of dark maculo-papules, together with hæmorrhages of larger extent and hæmorrhages from other places, such as the nose, etc. One who had seen the first stage might have considered it as already shown to be scarlet fever, whereas a little later the numerous papules might lead to the mistake of black measles.

The mistake between syphilitic eruptions and small-pox was generally to consider syphilis as variola, rather than the reverse. Most of such mistakes were dependent upon want of close observation of the whole eruption, and of a consideration of the history of the case. The multiformity of the rash, the condition of the glands, and the duration of the disease would determine, in a large number of cases, the correct diagnosis, to which the history would add confirmatory evidence. Two illustrative cases were given by Dr. Janeway. One additional point had been observed, namely, absence of the eruption on the hands and feet and in the mouth in cases of a syphilitic pustular eruption otherwise pretty generally distributed over the body. In his experience, syphilis caused more mistakes in diagnosis than any other disease, excepting only measles.

Mistakes between variola and varicella were not infrequently made. The distinction of typical cases was sufficiently easy, though he thought students were not infrequently puzzled by finding opposing statements regarding the appearance of the varicellous eruption, not only in different text-books, but sometimes, also, in different parts of the same work. The danger in mistaking varicella for varioloid was in paying too close

attention to the eruption, for sometimes a slight induration was met with at the base of some of the spots of varicella, due to irritation. A careful scrutiny would generally show on the back and buttocks, as well as behind the ears, characteristic spots, whilst in other places the eruption might be more or less altered.

In doubtful cases between variola and varicella, attention should be paid to the cause of the attack, if known, and to the time of the development of the eruption after the commencement of sickness. Dr. Janeway had known of several cases of variola being contracted from cases of supposed varicella — cases which had been pronounced varicella by careful and trained examiners. He had met several cases of a varicellous-like eruption, so that he believed in making a subdivision of varioloid which should include this, under the head of variola varicelloides. He was led to this opinion by observing several cases of vesicular eruption closely resembling varicella in persons protected by vaccination, who were in houses where a patient was under treatment for variola. Another chance for error existed in the fact of a patient coming under observation at that time in the history of a mild variola when the vesicle was full.

At times, different forms of skin disease were mistaken for variola, those which were most liable to be thus mistaken being herpes, erythema, urticaria, and lichen.

Typhus fever, when well marked, and presenting the characteristic eruption, occasioned little trouble in making a diagnosis. The earliest cases of a visitation were, however, not always so well developed, and, in consequence, the disease might gain headway, usually in localities most calculated to promote a rapid spread of the disease. In children, particularly, there might be great trouble in deciding between typhoid and typhus. Some years ago, while typhus was prevailing, an outbreak of fever occurred in a certain orphan asylum, where, out of a number sick, there was absolutely no characteristic eruption. The attendants said that only a few had looseness of the bowels; nose-bleed had not been marked, and the records of fever had not been carefully kept; so that it necessitated several days of study before an opinion could be given with some degree of certainty that the disease was typhoid fever. This was confirmed by seven autopsies.

If we were able to study a number of cases, we might find the average duration a marked help in diagnosis, especially in adults. A fever, the great number of cases of which terminated (many of them comparatively suddenly) between the eleventh and fourteenth days, should always raise the suspicion of typhus. An autopsy should invariably be made as a sanitary necessity (should the opportunity occur), to decide the nature of a doubtful outbreak of fever. The lesions of typhoid were characteristic, while those of typhus were in some respects negative; but, in practice, if one of a number of cases of fever which had lasted longer than a week should present, on autopsy, only an enlarged spleen, with minute hæmorrhages on the serous membranes, and parenchymatous degeneration of the liver and kidneys, we should feel justified in considering it due to typhus fever in this climate. Where isolated cases were concerned, an examination of the intestinal mucus and of the muscle should be made, lest the trichinosis disease might have passed as one of the infectious fevers.

Dr. Janeway said he had been much struck by the value of an examination as to the nature of the disease occurring in other inmates of the house or among the friends of a fever patient, as an early help in deciding upon the true cause of a case of fever. The neglect of resorting to this means of information and diagnosis had been in several cases in his experience very unfortunate. As in the case of small-pox, he said he would urge upon the profession the wisdom of oftener resorting to this plan in forming an opinion; and he stated that the Board of Health would do it on request. He was willing to admit that typhoid fever might occur together with typhus; but, in practice, two or more persons, exposed to the same cause of fever, should, if becoming sick with a febrile complaint, notwithstanding certain differences in the manifestations, be considered as having the same disease. He was particular on this point because, owing to some differences in the eruption and certain minor details, he had at times been told that of two members of a family sick, one had typhus, and the other typhoid fever.

It had sometimes been taught that typhoid fever was not contagious, and hence that if several members of a family should sicken one after the other, then if the symptoms were not decisive, this contagious nature would point toward typhus. Taken as a broad generalization of city practice, it might be held true; but, unfortunately enough, exceptions were met with, even in the city, to destroy its full value; while in the country we had the indirect contagion, if not the direct, causing several members of a family successively to fall victims to typhoid. He had known the use of antipyrine to cause the appearance of a profuse, somewhat measly rash, which led the medical attendant to suppose that he had previously considered typhoid to be after all typhus fever. As regards the matter of diarrhœa, all practitioners know that not a few cases of typhoid pass through the disease without it, and, again, that it may occur in typhus, although the passages did not possess the peculiar character of those of typhoid.

Typhus fever was not alone likely to be considered as typhoid, but also to be mistaken for cerebral inflammation, and particularly for cerebro-spinal meningitis, in consequence of the presence of a peculiar petechial rash in the latter. In doubtful cases optic neuritis, if present, would decide in favor of cerebro-spinal inflammation. But, notwithstanding the fact that he had had a considerable experience with cerebro-spinal fever, he had not as yet seen one case the rash in which resembled that of typhus. Moreover, we very frequently meet herpes of the face and lips in cerebro-spinal disease, but so rarely in typhus and typhoid fevers as practically to amount to an almost pathognomonic sign against these affections, if present in a doubtful case. It might occur in so many other conditions, however, that its presence was of no diagnostic value, except as against the probability of either typhus or typhoid.

Flea-bites occurring in typhoid fever had in some instances caused a diagnosis of typhus. So, again, had a profuse rash in which a number of the *taches bilenaties* of the French were present. He had endeavored also to ascertain how far it was probable that pediculi pubis were the cause of this eruption, though without much success.

Tuberculosis was a condition which caused not a few mistakes in the diagnosis of typhoid fever, and, at

times, of typhus also. Meningitis was so rare a complication of typhus or typhoid that its existence should always raise the suspicion of another process, and more particularly of tuberculosis. If under these circumstances choked disc should be found on ophthalmoscopic examination, it would still further increase the probability of this affection. The next step in the diagnosis would be to ascertain if at any point of the body there existed a tubercular lesion accessible to proof or strong suspicion, or if from the previous history there was any probability of such a condition in the lungs. It should be borne in mind that the examination of the lungs in unconscious, and particularly comatose, conditions was extremely unsatisfactory; so that very good examiners had supposed the lungs to be in health when making examinations in those states while in reality they were the seat of far-advanced phthisical processes.

If decided proof should exist, as a result of a physical exploration, that the lungs were the site of disease which from its position could be assumed to be tubercular, then it would, with the foregoing facts, be violence to evidence to call the disease typhus or typhoid, unless absolute proof of the presence of one of these affections could be obtained, as, for instance, by the characteristic eruption of typhus. Some supposed that the finding of bacilli of tubercle in the sputum would invariably decide the question between typhoid and tuberculosis, as, in cases seen moderately late in the disease without a reliable previous history, a broncho-pneumonia of typhoid, and that accompanying certain cases of tuberculosis, might be indistinguishable by physical signs. Provided that the examinations were made with care, and more particularly that every precaution was taken, in collecting the sputum to be certain that there was no contamination of the vessel, nor of the sputum after collection, then the presence of indisputable bacilli would be proof. But— and this was the point to which he particularly wished to direct attention— if it was supposed that any one could make the examination and decide, and if the ordinary manner of collecting sputum were employed, then there were chances for error.

Again, bacilli might not be found in the sputum from tuberculous patients, because of lack of care in selecting the proper portions for examination, and in some cases as a result of employing the short method for staining. While he had been able to make some very good diagnoses by the employment of these means, he had also met cases where phthisis had been diagnosticated as the result of the finding of a few bacilli, yet the subsequent course of the disease or an autopsy disproved the diagnosis. There were certain things which a hasty observer might mistake for bacilli, such as little crystals which appear red as the light is refracted in passing through them, not sufficiently decolorized bacteria of other kinds, etc. Dr. Janeway, however, had seen both typhus and typhoid fever co-existent with phthisis.

Pyæmia, and more particularly that dependent on otitis media and bacterial thrombosis of the lateral sinuses, also caused mistakes in diagnosis, as against typhoid and typhus fever. The reason for this was, that, in the unconscious or delirious state in which patients thus affected were apt to come under observation in hospital practice, no mention was made of the old ear trouble, and no examination of the ear could be made. The irregularity of the fever, the not infrequent co-existence of meningitis or cerebral abscess, with phenomena more or less strongly suggestive of these conditions, the history or the present observation of suppurative discharge from the ear, and that it had perhaps become foul or been arrested, tenderness or œdema over the mastoid process, and the observation of abscesses in the cellular tissue or of joint inflammation, should at once lead to a probable diagnosis of otitis media. The swelling of the little vein behind the ear and the œdema of the tissue over the mastoids might be absent in severe disease, and present when the subsequent course demonstrated that the process was not pyæmia.

In one instance, of a woman with some severe fever, which had been supposed to be typhoid, Dr. Janeway found as a useful adjuvant to diagnosis thrombosis of the internal jugular vein, giving a firm feel to the vessel. During the present year he had met with three illustrations of this malady, and in one the thrombosis of the lateral sinus was not of a completely obstructing nature; so that, in consequence, œdema behind the ear was absent. In a suspected case jaundice would point towards pyæmia or septicæmia, as distinguished from the fevers in which its occurrence was comparatively rare. Such jaundice was present in one of the three cases just referred to.

At the conclusion of his paper Dr. Janeway presented the heart and kidney of a patient who had died of

ULCERATIVE ENDOCARDITIS.

He was a salesman, twenty-seven years of age who had had rheumatism from childhood, and disease of the heart from at least the age of sixteen. The attack in question came on one week before his death. He had a chill, accompanied and followed by headache and pain in the back and shoulder. On the first day the temperature was 103° in the morning, and 104° in the evening. On the next day it was 99° in the morning, and 101° in the evening. On the third day he was affected with muttering delirium, and epistaxis; the morning temperature being 100°, and the evening, 104°. There was, however, no diarrhœa or tympanites.

Fourth day. Temperature, A. M., 102°; P. M., 103⅘°.

Fifth day. Temperature, A. M., 102⅘°; P. M., 104⅘°.

Sixth day. Temperature, A. M., 103; P. M., 104⅘°.

During this time the temperature had been more or less modified by the administration of salicylate of soda and antipyrine. On the seventh day, on which he died, the temperature was 103°.

In this case there was a strong suspicion of typhoid fever, but when the patient was first seen by Dr. Janeway, on the sixth day, he was much more stupid than a case of typhoid fever would have been at that early stage of the disease. On the forehead, behind the ear, and on the back and abdomen, were found a few petechial points. Under the circumstances, he made the diagnosis of ulcerative endocarditis. In addition to a heart-murmur which had previously existed for a long time, a new basic murmur was now detected. On the sixth day, after Dr. Janeway saw him, larger petechiæ or hæmorrhagic extravasations developed on the soles of the feet and palms of the hands.

The specimens presented abundantly confirmed the diagnosis. There had been but one kidney, and this was the seat of numerous hæmorrhagic extravasations.

On the aortic and mitral valves of the heart there were well-marked vegetations. This case, Dr. Janeway remarked, served to illustrate the possibility of mistaking ulcerative endocarditis for some of the more common febrile diseases.

The President, DR. C. A. LEALE, said that within the past three months he had been called to see a child, nine years of age, in whose case four physicians had already failed to make a diagnosis. The symptoms were very obscure, but resembled cerebro-spinal meningitis more than anything else. There was slight opisthotonos, but no eruption of any kind. The child died within forty-eight hours, and no autopsy was permitted.

Within a week, a child residing not more than a hundred yards from the last was taken with similar symptoms. We supposed that it was a case of some suppressed eruption, and ordered the child to be placed in a hot pack. As there was marked exhaustion, alcoholic stimulus was also given freely. Within three days measles became developed, and the patient passed through a violent attack of the measles.

Three years ago he made out the diagnosis of varioloid in the case of a young lady twenty-one years of age. As the attack was a mild one, and there was a possibility of doubt about the nature of the case, he requested that an expert from the Board of Health should be called in, and this gentleman confirmed the diagnosis. Some time later, however, another physician saw the case, and he expressed the opinion that the young lady had had *varicella*, which naturally created a great deal of disturbance. In this connection, Dr. Leale alluded to the great injustice which had been done a well-known New York physician in imposing on him a fine for performing his duty in reporting to the sanitary authorities a suspected case of small-pox.

DR. P. BRYNBERG PORTER called attention to the striking resemblance presented by herpes zoster of the forehead, when at its height, to erysipelas, and the possibility of making a mistake in diagnosis, unless one had seen the case from the beginning, or took special pains to ascertain the exact history of the attack. He related a case in point.

DR. JOHN SHRADY remarked that it was often very difficult to make a positive diagnosis in cases of hæmorrhagic small-pox occurring at the beginning of an outbreak of the disease, and recited cases to illustrate this. He also spoke of another class of cases still more obscure, when the patient has a second attack of the disease.

THE AMERICAN DERMATOLOGICAL ASSOCIATION.

THE tenth annual session of the Association was held at Indian Harbor Hotel, Greenwich, Conn., August 25, 26 and 27.

FIRST DAY.— MORNING SESSION.

The meeting was called to order by the President, DR. EDWARD WIGGLESWORTH, of Boston, who delivered the following opening address:

Gentlemen, — Just ten years ago, at Philadelphia, I had the honor of calling to order the first public meeting for the organization of this Association. Our specialty for the first time, received national acknowledgment. Our guerrilla warfare was over, and our subsequent record has been one of unbroken successive victories over bigotry, error and ignorance.

But the day of paladins is past and our ranks will admit more recruits. There are still remaining opportunities for more extended instruction of students in medical schools, while the lack of hospital facilities for the proper clinical treatment of diseases of the skin, is a standing shame and disgrace to our municipal authorities, our hospital boards and to the medical profession itself. "As now arranged nearly everywhere amongst us, these institutions refuse to a large class of sick persons the benefit of hospital residence either wholly, or offer them, if received, not we may fairly say, the best medical skill it is in their power to procure." Some progress has, however, been made. New York has now a special hospital for skin diseases, besides two wards in the Charity Hospital, and Philadelphia has special clinics with beds at three different institutions.

That the workers are ready as soon as they shall have opportunity, is evident. Ten years ago, our officially recognized representatives were, four professors, five clinical professors, one instructor, and six lecturers; total sixteen. To-day, we number seventeen professors, eleven clinical professors, six instructors, and sixteen lecturers; total fifty. Nor do I include genito-urinary surgery, which I regard as a distinct specialty from that of dermatology, which of course includes syphilis.

About twice as many cases of diseases of the skin are now annually treated by specialists as there were ten years ago.

The contributions to American Dermatological literature during the past decade, include the best treatises, hand-books and atlases, the only periodicals and some of the best monographs of the time, in the English language.

Our sole local organization, the New York Dermatological Society, is as active as ever, and the good work which it has already done is constantly increasing.

Two honorary and three active members of our original Association have passed away since its organization. Twelve active members, all living, have been added to its ranks. So much for our material progress and present prosperity.

Other objects of the foundation of our Association have been by no means neglected during the past ten years. There exists to-day, a harmony and good feeling amongst us which, but for the personal acquaintanceship resulting from the formation of this Association, never would have existed. We have come into better accord as to the "Nature and Treatment of Skin Diseases." Our increased membership proves that our Association is "held as a place of aspiration;" and it has consistently required "independent work in our department" as the essential preliminary step toward the acquisition of such membership. The systematic work of our standing committee upon statistics, has already furnished valuable data for comparison, as well as a series of excellent reports upon "Leprosy in America." Concerted official effort has done much and will do more to repress the rank luxuriance of growth of dermatological nomenclature and to furnish a "uniform and simple system."

While much has been accomplished, much still remains to be done. The idea of specialism, already

rooted, is to be nurtured and trained in the minds of the profession and of the public, and the practical development, socially, of our specialty itself is to be elaborated in many minor details. The pioneer must no longer prove a martyr. A knowledge of the weaker side of human nature, useful for selfish purposes, financial ends, must no longer be allowed to usurp the province of exact scientific acquaintance with disease, inuring to the benefit of our race. The "elaborate division of labor" is "as useful and successful in a learned profession as it is in the mechanic arts," for it is merely a relative question of height of standard. Specialism substitutes quality for quantity, which substitution is the essential characteristic of the civilized man as distinguished from the savage, while the rapidity of such substitution gauges the progress of civilization itself. Medicine is merely that complex whole which results from the combination of all its component parts, and their individual advancement is the criterion of its own progress.

Science is only exact knowledge. Medicine is that knowledge specially directed to the physical welfare of mankind, and specialism is only that further subdivision rendered necessary by the very various parts, composing the individual, and possible by the extension of our opportunities for studying these parts due to increase of mechanical means for enlargement of the field of our hitherto unaided senses. No one can to-day, "take all knowledge to be his province." Science does not culminate in a Jack-at-all-trades, least of all in one whose conscience has become anæsthetized by custom, who confounds his own limitations with the "limitations of human understanding," and his own ignorance with "the immaturity of medical therapeutics." The specialist builds his own boundary-wall and cannot, if he would, poach upon the preserves of others. He "distinguishes what he can do from what he can not," thus filling the old definition of the best physician. He cannot maltreat a patient, and when compelled to confess ignorance and seek superior wisdom, charge the wronged sufferer another and still higher fee for a "consultation," which is in reality a confession. It has been sarcastically called "the sole duty now-a-days of the family doctor to decide what specialist shall be summoned." It certainly is his duty, and a very important one as a man of honor, to decide whether any one, and if so, who can probably accomplish that wherein he admits that he himself has failed. Unfortunately, many know so little that they are even ignorant of how much is known by others; but in many respects, the specialist has already raised the average standard of requirement for general practice to such an extent, that much of the old routine practice of physicians who treated their patients for the very diseases for which they referred members of their own families to the specialist, has now become punishable mal-praxis. But the general practitioner has his revenge in opposing as unnecessary the hospital appointment, and even the private practice of the very specialist to whom he himself flees as "a very present help in time of trouble."

We are told that "the human body is made up of parts and functions so thoroughly interdependent, that it cannot be parcelled out into defined and isolated regions." It can and it cannot. What scientist divides a country into square miles and attempts to become thoroughly conversant with every atom existing in each of those miles? The special divisions of study are rather the flora, the fauna, the geological strata, etc., though all these may pervade identically every mile of the region. If regional surgery is possible, then specialties are certainly not contra-indicated. We hear of "appalling pathological conglomerates" due to lack of proper "general medical treatment." Not only "conglomerates" but often single lesions are very variously diagnosticated by different general physicians, and the "conglomerates" are usually merely the aggregated effects of original causes which might have been obviated by proper investigation in due season, on the part of suitable specialists.

The aforetime "consulting physician" meant one who in addition to his general acquirements knew more about some particular thing than any one else. We may be sure that his general acquirements had to pay the penalty. To-day, we honestly admit this and renouncing the practice obtainable by general acquirements, keep to that particular thing of which we know more than others. No one has mental ability enough at the present time to add to the greatly extended knowledge necessary to the general physician, the intensified fundamental acquaintance with detail needed by the specialist. Life is too short for the ablest intelligence to exhaust even any one specialty. The physician may, like Newton, "think the thoughts of God after him," but the thoughts of the infinite upon the smallest molecule of matter, call for more than the limits of a finite existence. The true consulting physician of to-day is the specialist and he should therefore receive this title at the hospitals with which he is connected, while those ex-physicians, called consulting but never consulted, should receive their true and proper title of emeriti.

But enough of the "idea of specialism." The public will in time appreciate the absurdity of being content with inferior results in one branch of medicine, because, forsooth, there are so many others in which their medical adviser is equally or more at home. It will reason rather that he who "insists upon doing the work of ten men, manifests a quality of mind which we can only call arrogance, and which challenges for his work severe criticism." Versatility will not atone for crude and imperfect work, any more than will lack of time, hurry of life, keenness of competition, or financial necessity and it is merely brazen self-assertion which delights "not so much in doing the thing well as in showing how well he can do it."

Believing in the ultimate achievement of all possibilities and in the progress of Truth, I have no doubt as to the future of specialism if we are honest and earnest. Not infinite omniscience, but infinite morality is the duty of the specialist, and this conscientiously carried out, will blunt the sharpest dart of the hostile general practitioner. While visions of what yet remains to be accomplished might well lead us almost to despair, a mere glance at the generally prevailing ignorance on the part of both physicians and their patients, shows conclusively that we and our work are imperatively demanded.

Dr. Wigglesworth next considered in detail the duties in the future, of members of the Association as to the establishment of special skin wards in all general hospitals; as to a revision of the existing nomenclature and classification of skin diseases; as to improvements in the Annual Reports of Transactions; the use

of the metric or international decimal system; more extended statistics; the establishment of a permanent committee upon new remedies; the question of fees and the remuneration of physicians by others of the same profession; the desirability of a (proposed) "consistent schematic plan for the report of cases," always accompanied by a summary, and the duties of specialists as to instruction. He mentioned the establishment in New York of a society for the prevention of contagious diseases. Attention was called to the proposed union of all the special medical associations of America into a general "Congress of Physicians."

Then with congratulations upon the past and hope for the future and a request for coöperation and support in the discharge of his duties, he welcomed the members present and declared the meeting open for business.

The first paper read was entitled:

ERYTHANTHEMA SYPHILITICUM,

by EDWARD BENNET BRONSON, M.D., of New York.

The purpose of the writer was to call attention to certain cutaneous eruptions of an erythematoid character occurring in connection with syphilis, and so far as possible determine their etiology. In the first place, a case was reported of a syphilitic patient who developed a peculiar eruption upon the head, hands and feet. Although the eruption presented no pronounced syphilitic characteristics, it was regarded as due to syphilis for the reasons that it was shortly followed by an outbreak of well-marked specific efflorescences on various parts of the body, and, moreover, there was a transformation of the eruption upon the head, into infiltrated lesions presenting a distinct syphilitic character; the eruption first appeared on the face in the form of an erythema which was covered with vesiculo-papular efflorescences. Later a similar outbreak occurred on the nape of the neck. The vesiculo papules broke, leaving excoriated surfaces of a diphtheroid character from which there exuded an exceedingly abundant, foul-smelling discharge. Soon after, vegetating growths made their appearance, which upon the bearded parts of the face were quite exuberant and resembled condylomata acuminata. Those upon the neck, formed more discrete, tuberous prominences and had the appearance of condylomata lata; while upon the upper parts of the face, the elevations were nummular and had comparatively smooth though somewhat lobulated surfaces. After a week or two, the erythematous areas, which formed the bases of the vegetating lesions, became the seats of a gradually increasing, copper-colored infiltration. The palms and corresponding surfaces of the fingers, were covered with a deep red, sharply circumscribed erythema, which was followed by lamellar desquamation. A similar eruption occurred in patches upon the soles. The finger-nails were all more or less affected with onychia sicca. Upon the body and limbs, several crops of well-marked syphilitic papules succeeded each other and finally all the manifestations yielded rapidly to mercurial treatment. The preliminary eruption in this case was characterized as an erythanthema dependent in some way upon the specific disease. Other instances of erythematoid eruptions occurring incidentally to syphilis, were referred to as being more or less analagous to the above cited case.

Allusion was made to the syphilitic roseola as a possible case in point; then to the preliminary erythematous eruptions observed in hereditary syphilis—the *érythème précurseur* of the French — and also to certain forms of coincident or preliminary erythema as described by Hebra, Neuman, Danielesen, Dipp and Finger. Attention was next called to the syphilitic erythema nodosum of Mauriac and three cases of this affection were reported, in one of which, the erythematous eruption was apparently succeeded by a syphilitic infiltration that pursued a course similar to that of a breaking-down gumma of the skin.

Finally it was attempted to define more precisely the etiological relations of these various erythematoid eruptions occurring in connection with and probably as a consequence of syphilis. It was maintained that probably they were not equivalent in their mode of origin to the syphilodermata, but rather to certain angioneurotic or neuritic affections, which they closely resembled. The true syphilodermata are always characterized by a specific infiltration and are probably the result of a determination of the materies morbi to the surface. They are therefore pathognomonic of syphilis. The erythanthema syphiliticum, on the other hand, is only an indirect effect of the syphilis, the result of reflex irritation of the skin from the action of the disease upon nervous centres, and therefore not pathognomonic of syphilis. The fact that this might be followed by a true syphilitic infiltration *in situ*, was regarded as analagous to the effect sometimes observed of traumatic irritation in syphilitic subjects, where local injuries became the seat of specific infiltrations.

DISCUSSION.

DR. I. E. ATKINSON, of Baltimore. I wish to say a few words in regard to pathognomonic syphilitic eruptions. In this connection, a great deal of caution must be exercised, and I think we should not dogmatize with regard to the specific lesions of syphilis. Lesions similar to those described by Dr. Bronson are not of excessive rarity in cachectic subjects and in cases of malignant syphilis, but in my experience they have always been manifestations of late or tertiary syphilis.

DR. J. C. WHITE, of Boston. The occurrence of the forms of disease which have been described are so rare in syphilis, we know so little of the nature of erythema nodosum and its causes, and we know so little of the nature and causes of so-called erythema herpetiformis, which, I think, should be called erythema multiformis, that it seems to me we must have some more exact data before we can regard these affections as a necessary sequel of syphilis, and as anything more than accidental occurrences. While there is nothing *a priori* against a causal relation existing between these conditions and syphilis, such relation has not been proven. The early roseolous exanthematous condition of the skin in syphilis is of sufficiently frequent occurrence to be looked upon as a distinct feature of syphilis. This is wholly unlike the rare forms of dermatitis which have been described to-day.

DR. F. B. GREENOUGH, of Boston. Syphilitic roseola seems to me to be decidedly distinct from other forms of congestion of the skin, especially in one point, that is, during the subsidence of the congestion, little points of distinct congestion continue for a long time. These appear to represent the follicles. The points of pigmentation are also an almost constant occurrence. This I have not seen in other forms of affection of the skin.

Dr. G. H. Tilden, of Boston. It seems to me that in the present state of our knowledge, it would be more philosophical to consider the appearances described as accidental, rather than as dependent upon the specific disease.

RUBELLA OR RÖTHELN,

by Dr. I. E. Atkinson, of Baltimore.

The paper was based upon a review of the literature of the subject, and a study of the reported cases. The disease was regarded as distinct from measles and scarlet fever. The period of incubation varies between two and three weeks. In many cases there is no prodromal stage. There may, however, be prodromata for twelve or twenty-four hours. Catarrhal symptoms are generally absent, but they may be present. Sometimes there is congestion of the throat. Swelling of the lymphatic glands is a peculiar and marked symptom. This swelling is painful, but does not pass on to suppuration. In many cases fever is absent. The eruption first appears on the forehead and face, and in the course of a few hours, spreads to other parts of the body. The eruption is more or less irregular, being more intense in some situations than in others. From the beginning to the disappearance of the eruption is usually three or four days. In the greater number of cases, desquamation fails to occur. Complications and sequelæ are not unknown, the most common being bronchitis, pneumonia, and gastro-intestinal disorders. Renal affections may follow this disease. Relapses occasionally occur, but not later than the end of the second week. The prognosis is almost always favorable.

The only difficulty in diagnosis is in connection with measles, and in isolated cases, a thorough consideration of all the points is essential to a correct conclusion. Very little treatment is required, except in the presence of complications.

On account of the confusion existing as to the nomenclature of this disease, the speaker suggested that rubella be accepted as its proper title, and that it might be known in popular language as epidemic roseola.

DISCUSSION.

The President. Several years ago I suggested that measles be called morbilli, and rubella or rötheln be used to signify what is termed German measles, and roseola be reserved as the title for the rose-colored spots seen in syphilis and other conditions. There does not seem to be any necessity for the introduction of a new term.

REPORT OF A CASE OF LYMPHADENOMA (MYCOSIS FONGOÏDE) AND AUTOPSY,

by Dr. G. H. Fox, of New York.

(In the absence of the author, the paper was read by the Secretary).

The paper described the case of Mrs. G., aged thirty-three years, the mother of six children. During pregnancy, in the summer of 1881, she suffered with general pruritus, which passed away after her confinement in October. A year later, small, flattened, circular tumors appeared in the axillæ and on the breast. These became moist, and were accompanied with a burning sensation. The eruptions disappeared from these situations, and reappeared upon the back and other portions of the body. After the birth of her last child in February, 1885, a tumor developed at the inferior angle of the left scapula. The lesions on the other parts of the body disappeared, with the exception of two spots on the finger and one on the left cheek. The tumor on the left scapula gradually softened and disappeared.

The patient was admitted to the hospital in October, 1885, and was fairly well nourished. There were, at this time, numerous tumors over the body, some of which were superficially ulcerated. The worst tumors were on the breast. Hypodermic injections of Fowler's solution were used without benefit. Chaulamooga oil was given in increasing doses until forty drops, four times daily, were taken without causing any improvement.

The patient died in April, 1886. The microscopical examination gave the usual appearances of these growths. The internal organs were found to be normal.

DISCUSSION.

Dr. G. H. Tilden, of Boston. One year ago I reported a case of this disease. I said then that it was not sarcomatous. Rindfleisch states that he has found a distinct micrococcus inside of the bloodvessels in this connection, and recently this has been confirmed by another observer. It looks as though what we ordinarily know as malignant lymphoma, affecting the lymphatic glands, with deposits in other parts of the body (Hodgkin's disease), is one of the infectious diseases. I should not be surprised to find that this *mycosis fongoïde* is a variety of the same disease, and that it is nothing but an acute infectious disease.

The next paper, entitled

A NOTE RELATIVE TO THE BULLOUS ERUPTION OCCURRING AFTER THE INGESTION OF IODINE COMPOUNDS,

by Dr. J. N. Hyde, of Chicago, was (in the absence of the author, read by the Secretary).

The first case described was that of an infant seven months of age. Six weeks before coming under observation, the child had suffered from a febrile attack, the exact nature of which was not known. Three weeks later the eruption made its appearance. The lesions at first presented the appearance of chicken-pox. The child's face, the dorsal aspect of the hands and forearms, and the scalp were covered with isolated whitish, split-pea, to marble-sized, flattened, slightly umbilicated lesions, resembling molluscous tumors. The contents of the lesions were inspissated, thick, and grumous, and of such consistency that they did not escape on rupture of the sac. It was learned that iodide of potassium in one-grain doses had been administered for the febrile attack. On the discontinuance of the iodide and the use of antiseptic powder, the lesions rapidly disappeared.

Case II. A lad, fifteen years of age, who had recently undergone an operation for necrosis of the right femur, developed an eruption involving the entire body. There were two distinct sets of lesions. That which predominated was composed of annular, circinate plaques, varying in diameter from several centimetres to half a meter. There were also here and there, particularly about the finger ends, distinct blebs. The patient had been taking iodide of potassium in fifteen-grain doses. This was discontinued, and the eruption speedily disappeared.

There are two distinct types, the bullous, and the quasi-bullous eruption produced by the ingestion of iodide of potassium. In the first form, the patients

are often well advanced in years, often cachectic, and frequently affected with syphilis or other grave disease. In what may be regarded as a second sub-form of this exanthema, there are di- or poly-morphic symptoms. Here bullæ are commingled with papules, tubercles, and other patches of disease. The speaker then described other cases of similar eruptions recorded by various writers, and, in conclusion, presented the following interrogative propositions:

(1) Are there not three sub-forms of the bullous exanthema developed in certain individuals after the ingestion of iodide of potassium?

(2) Is not the first and most common of these to be generally recognized in persons of advanced age and cachectic condition, the rash being then present in the form of typical bullæ?

(3) Is there a second and still rarer sub-form, in which the eruption is displayed in di- or poly-morphic manifestations, typical, perfect bullæ being then mingled with papules, tubercles, scarlatiniform maculations or with other and different lesions?

(4) Is there not a third and rarer sub-form, the quasi-bullous rash to be most frequently recognized on the face and dorsal aspect of the hands and forearms of infants and children, where the lesions are semi-solid, slightly umbilicated and filled with inspissated yellowish matter and which may shrivel and dessicate on the suspension of the drug inducing the condition?

(5) Is this last described lesion one to be recognized solely as the result of the ingestion of iodide of potassium, never under other circumstances, and one as peculiar to the special condition it represents as is the gumma to syphilis?

DISCUSSION.

DR. R. W. TAYLOR, of New York. While the most general eruption produced by iodide of potassium is an acneiform exanthem, yet it may cause dermatitis with multiform lesions with bullæ, which may contain serum, pus or even blood. I think that some of the cases of extreme dermatitis multiformis which have been described, have been due to this cause.

I recently saw a peculiar form of iodine intoxication. It was in a case of gummatous infiltration of the pharynx where iodoform had been resorted to as a local application. In the course of two hours it produced a diffuse eruption on the face, neck and hands. On the hands it assumed an eczematous character.

DR. J. E. GRAHAM, of Toronto. I have had one case similar to that described by Dr. Hyde. A young man twenty-two years of age, had contracted syphilis two years previously. Noticing some pimples on his face, he secured a preparation of iodide of potassium containing five grains to the dose. I saw him two days after he had begun to use this preparation. He then had a bullous eruption principally upon the face and neck. At that time I thought that it was a tertiary manifestation and increased the dose of iodide to fifteen grains. Two days later, the eruption on the face was much increased and recognizing the cause of the condition, the drug was stopped and the eruption rapidly disappeared.

DR. I. E. ATKINSON, of Baltimore. One year ago, I saw a case of what was supposed to be malignant syphilis; the patient had had syphilis and had been put on the use of iodide of potassium. The lesions continued to increase and after the iodide had been taken for six months, I saw the case. There was an enormous formation of scar-tissue over the face and neck. In addition there were bullæ and elevated infiltrated plaques. The appearances presented were unlike those produced by syphilis and I thought that they were due to the iodide of potassium. The drug was stopped and in six weeks the ulcerations had healed, the cicatricial tissue of course remained. I think that we can not lay too much stress upon the dangerous conditions which may follow the administration of the iodides.

EVENING SESSION.

The first paper was on

PRECOCIOUS GUMMATA,

by DR. R. W. TAYLOR, of New York.

After a thorough consideration of the subject and the presentation of a number of illustrative cases, the following conclusions were presented.

(1) Like the osseous affections, affections of the nervous system, malignant syphilides in general besides many other affections, the gummata syphilis may be precocious in appearance, occurring as early even as the second month of infection but usually in the third or fourth month or after that time.

(2) Of the precocious gummatous syphilide or gummata, there are three quite clearly marked forms, first, the early, general and copious form; second, the more localized form which may invade several regions, is usually symmetrically distributed and sometimes even is confined to one region, particularly one side of the face or scalp and the roof of the mouth; and third, a form in which more or less severe neuralgias precede and accompany the eruption, which in many particulars resembled simple erythema nodosum, but which in its etiology is not in any way related to this simple form of eruption but is a direct outcome of the syphilitic diathesis.

(3) That these precocious gummata partake in general of the features of those of later forms, but that they differ in the more acute invasion, in a much more rapid course and are usually not as profound and destructive in their action as the classical eruption.

(4) That of these precocious forms of gummata, there are found to be two varieties, one a non-ulcerative or resolutive, the other, ulcerative.

(5) That in the treatment of these precocious syphilides, a combination of mercury and iodide of potassium is much more efficacious than is mercury alone.

(To be continued.)

— The treasurer of the Dundee Royal Infirmary recently received a donation of £100 from a grateful patient, in return for treatment received by the latter while he was an inmate of the Old Infirmary in the year 1843.

— The Paris Academy of Medicine is reported to have announced the following remarkable subject for a prize essay: "Préciser par une série d'observations s'il existe un traitement abortif de la syphilis confirmée." To abort a confirmed syphilis appears to be as encouraging a task as the proverbial locking of the stable door after the steed is stolen.

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THE ADDRESS OF MR. ERICHSEN AT THE BRITISH MEDICAL ASSOCIATION.

THE addresses at the British Medical Association of the present year were of more than usual interest, and the address of Dr. Billings published in the JOURNAL appeared in quite remarkable company. Among these addresses, that of Mr. Erichsen attracts attention for the high scientific plane to which it would raise surgery, and especially for the assumption that perfection has been already reached in the mechanical details of the art, and further progress in that particular rendered impossible. Further progress, according to Mr. Erichsen, will be in the science of surgery, rather than in the art. The following quotation will serve to illustrate Mr. Erichsen's idea.

"That the final limits of surgery have been reached in the direction of all that is manipulative and mechanical there can, I venture to think, be little doubt. Within these limits there may be much of movement, of change, of modification in the technique, if I may borrow that word from art; but movement is not necessarily advance; it is often the mere restlessness engendered by dissatisfaction with established methods; change may be the outcome of mere personal vanity, or of more unworthy motives."

What Mr. Erichsen has said regarding the necessity for advancement in the science of surgery we all accept, but it is very difficult to accept the assertion that progress in mechanical detail is at an end. The very great changes — changes which are distinct improvements and advances — within the last few years, none of which could have been foretold, are, to minds differently constituted from Mr. Erichsen's, indications of still further changes in the future.

The very instances of practical perfection which the talented author adduced may be counterbalanced by others where perfection is evidently far off. If ovariotomy has reached a high point of excellence, there is still uncertainty and doubt as to the proper method of treatment of surgical diseases and injuries of the intestinal tract. If the operation for strangulated hernia gives results which leave little to be desired, who believes that mechanical perfection has been reached in the operation for the radical cure of hernia? And one might continue the list of imperfections to great length.

It does not require a very vivid imagination to conceive great changes in operative details from more perfect instruments. To give a single instance, it is not beyond possibility that we shall some day see the still modern rapid lithotrity materially modified by an instrument which, having once seized a stone in the bladder, shall never release it until it is completely pulverized and evacuated.

In his recent address on the "Study of Science," Sir John Lubbock quotes the title of an essay of Boyle's, "Of man's great ignorance of the uses of natural things; or that there is no one thing in Nature whereof the uses to human life are yet thoroughly understood," and he considers the saying as true now as when it was written; and among the uses to human life may certainly be included the surgical applications.

Modern inventions are not yet in such a state as to yield their best results to surgery, and that marvellous discoveries still await the explorers of nature, no one can doubt. Not until man has perfect knowledge of and perfect control over the forces of nature can we be sure that the limit of their application to surgery has been reached. What changes the electric light, for instance, may finally produce in the art of surgery it is difficult to foresee exactly, but he must be a conservative of conservatives who denies the possibility of bringing about changes, even radical changes, in surgical manipulations by the illumination of internal organs by this means.

Even the advances in the science of surgery to which Mr. Erichsen looks forward must necessarily bring changes and improvements in the art. The practical application of scientific discoveries cannot be understood beforehand nor bounds set to the extent of their influence. Who could possibly have known of the influence Pasteur's researches on spontaneous generation would have on surgical theory and art. How can any man foresee the influence upon surgery of our very recent knowledge of the ptomaines and leucomaines. Instead of saying with Mr. Erichsen "The old lines of ordinary clinical observations and dead-house pathology have long since been followed to their final termination," we should prefer to say, the experimental researches of the biological, physiological and pathological laboratory must guide, illustrate, and illumine the ordinary bedside, and dead-house observations to be in turn directed and confirmed, the two methods of research acting together to build up a yet nobler art on a wider and more scientific basis.

Mr. Emerson has taught us that "if anything could stand still, it would be crushed by the torrent it resisted," and it causes quite a shock to learn Mr. Erichsen's opinion that surgical art is already at a standstill. At first one feels indignant that so eminent a man should thus set bounds to the art of which

he has been for so many years a master. A more careful reading serves to show that Mr. Erichsen desired to emphasize the fact that the science of surgery needs particularly to be studied and that it is in the line of science that advance must be made; apparently in his desire to emphasize this, he has too emphatically spoken in regard to the present position of the art. It is a question, after all, if there is any real difference of opinion between Mr. Erichsen and ourselves. Much of what we should regard as advance, Mr. Erichsen would perhaps call change in technique, and the art and science are so mutually dependent that it might not always be possible to say to which division the advance should be ascribed.

In one thing Mr. Erichsen would agree with us undoubtedly. If he considers that the art is perfect he will also admit that not every practitioner of the art is perfect. No man can rest secure in the thought that he has himself reached the standard of perfection. We feel sure that no careful searcher will find difficulty in imperfections in the art itself.

STATE INSPECTION OF MILK.

THE second annual report of the New York State Dairy Commissioner, lately issued, furnishes a rather remarkable instance of how a large amount of money may be expended with comparatively meagre results. It does not appear from the report what the exact appropriation may be, but that it is large may be inferred from the fact that, not including the salary of the commissioner, the expenditures for the first nine months of the year amounted to more than thirty thousand dollars. For such a sum as this the people of New York State have a right to expect much more in the way of inspection of dairy products than is shown by this report, which, it may be remarked, contains considerable irrelevant matter, much that is both useless and absurd, and not a little taken bodily and without credit from German works.

In the inspection of butter, eight collectors and several chemists and lawyers were employed. More than eight thousand samples were purchased, but only two hundred and twenty-eight, or one in thirty-five were delivered to the chemist for analysis. Of the cases taken before the courts but fifty-four were disposed of, resulting in thirty-one convictions and twenty-three acquittals. It is but just, however, to note that the commissioner and his co-workers have been and are very much hampered by tiresome delays due to the complex judicial system.

In the department of milk inspection nine collectors were employed on an average of one hundred and ten days each. Over nineteen thousand specimens were "examined" but only three hundred and forty-one, or one in fifty-seven, were submitted for analysis. The local authority at Buffalo had nearly as many analyses made from that city alone. It does not appear from the report that more than six convictions for violation of the milk law had up to the end of the year been obtained.

This is not what might be called a very brilliant showing and is in marked contrast to the same work as carried on by the Massachusetts Board of Health, or by the Inspector of Milk for the city of Boston. The general supervision of the milk and other food supply of that State is under the direction of the Board of Health, which employs two collectors and several chemists for the work. The collectors not only obtain samples from all parts of the State but do all the work involved in the preparation of cases for court, and act as prosecuting officers; they are not engaged in making a record of samples purchased but not delivered for analysis, nor of miles travelled, as is apparently the custom in New York, where three of the collectors employed on an average of two hundred and sixty days, travelled seventy-three thousand miles, "examined" more than fifteen thousand specimens, and delivered two hundred and seventy-four to the chemists for analysis. In Massachusetts the collectors deliver all their samples to the several chemists who report directly to the Secretary of the Board of Health, and the latter sends warnings or gives orders for prosecution according to circumstances. So far as the inspection of milk and other dairy foods is concerned that State Board of Health, with a very small appropriation and with a limited number of employees, performs more actual work and shows much more tangible results than the New York Commissioner with his large appropriation and staff of collectors, chemists, lawyers, and assistant commissioners.

The New York authorities, however, are doing a very important work which it is hoped other Boards may at no distant date have authority to undertake; that is, the inspection of dairies, creameries, stables and cows. The importance of thorough work in this direction cannot, in the light of recent observations and investigations on the communicability of diseases, be overestimated.

It may be remembered that it was proposed before a legislative committee in Massachusetts in the early spring to take the work of inspection of milk and milk products and the enforcement of the law from the jurisdiction of the Board of Health, and delegate it to a commissioner, as in New York. The work of the latter was held up as a model of excellence by those who were interested in the movement, who were two in number, one a large dealer, the other a candidate for the office of commissioner. The proposition died an easy death and in view of the manifest undesirability of the change it is probable that no more serious attempt will be made.

MEDICAL NOTES.

— In the last five years Billroth has performed operations on the stomach in thirty-two cases, with nineteen fatal results. Out of fifteen gastrectomies for cancer, there were seven recoveries.

— Dr. H. A. Kelley, of Philadelphia, reports the successful removal of an ovarian tumor weighing one hundred pounds. Dr. Goodell removed a tumor of one hundred and twelve pounds from a woman who weighed after the operation but seventy-four pounds. In each case the tumor reached the patient's knees, and she could not lie down.

— A tendency to an increase, in the proportion of female children born has recently been noticed in Paris. Normally, the male children outnumber the female in the proportion of 103.5 boys to 100 girls, but for the last few months the proportion of girls born has undergone a remarkable increase. Taking twenty-three weeks, the average has been exceeded in eleven. The same tendency appears to exist all over France, and is inspiring serious apprehension to fathers of families who will be called upon to supply an extra number of *dots*.

— In the *Lancet*, June, 1886, p. 1148, Mr. B. F. Hartzhorne writes that he has used cocaine with beneficial results in parturition. The manner in which it is used is as follows: By means of an ordinary glass syringe, a compound, composed of six parts of cocaine, twenty-four of vaseline, and twenty of glycerine, is injected as high up the vagina as possible. By this means the cocaine is applied to all parts of the vagina, insuring a more lasting effect than when applied in solution. The pain due to pressure, the dilatation of the cervix, and the expansion of the perineum, is so markedly relieved by this means, according to the writer, that an ordinary labor is deprived of half its agony.

— Medical literature contains many records, remarks the *Medical Press and Circular*, of the curious symptoms produced by one or other variety of the parasites which infest some part of the alimentary canal. It is, however, not often that death can be distinctly traced to them, and the details of such a case just recorded on behalf of the police in Paris are sufficiently extraordinary to call for more than a passing remark. A young girl in good health was found dead in bed by her parents. Nothing could account for her sudden decease, and in their fear of the possible consequences of this unexpected death, they resolved to leave the body in some sequestered spot to be found or buried without any explanations being asked. When the body was found, its discovery created the greatest excitement; thousands of people visited the *morgue* daily to obtain a glimpse of the poor little corpse, no doubt being entertained as to the fact of a wanton crime having been committed. It now appears that death was due, not to violence nor poison, but to the somewhat prosaic accident of impaction of a bundle of intestinal worms in the larynx during sleep. The occurrence is certainly a curious one, and shows what unexpected causes may be at work in leading to a fatal result. The extraneous elements of interest in the case were entirely due to the foolish action of the parents, whose conduct was certainly reprehensible to the last degree.

Miscellany.

A CONTRAINDICATION OF PARALDEHYDE.

It has been asserted that paraldehyde does not give rise to any unfavorable secondary symptoms, and that there is no known contraindication to its administration, remarks the *Therapeutic Gazette*. It quotes, however, from the *Neurologisches Centralblatt*, No. 11, 1886, a little note by Dr. Sommer, of Allenberg, which renders the correctness of these views doubtful. A patient, eighteen years of age, who, for six successive days, had taken daily doses of one drachm of paraldehyde, showed on the seventh day, a few minutes after having drunk half a bottle of beer, a deep scarlet injection of the skin, covering almost the entire head, neck, back, posterior surfaces of the lower extremities, and partially the chest, abdomen, and upper extremities. This peculiar phenomenon lasted half an hour. For the sake of an experiment, Sommer gave the patient on the next evening another dose of paraldehyde, followed by a small quantity of alcohol on the next morning. The same vascular injection having appeared again, Sommer concluded that paraldehyde ought not to be given to patients presenting atheromatous defects, and should, at least, not be employed in connection with alcoholic liquids. Only one other observer, Eickholdt, has previously observed similar interferences of the circulation following after the employment of paraldehyde. He noted the occurrence of cerebral congestions and of vaso-paralytic symptoms after the prolonged use of this drug.

THE DANGER OF SYNCOPE IN HOT BATHS.

It is surprising, says the *Lancet* (July 3), that deaths by syncope during the use of hot baths are not more common than the coroner's court returns would show them to be. The peril of faintness by the mere determination of blood to the surface of the body, thus quickly depriving the heart of its usual normal support and stimulus, is very great. In cases of muscular weakness of the heart this danger must be imminent whenever the "hot" or even the "warm" bath is used. Apart from this obvious risk, however, there is always the possibility that in weakly or too impressionable states of the nervous system the peripheral stimulation produced by the application of heat to the whole of the cutaneous extremities of the afferent nerves may so act on the centres as to arrest the evolution of energy by an inhibitory influence. It is doubtful whether we lay enough stress on this consideration when prescribing the use of such external agents as act on large areas of surface and strongly impress the nerves there commencing. We know how burns of even moderate severity may kill by the impression they produce on the centres of vitality from the periphery. There is much to learn in regard to the nature and extent of the central effects which may be thus caused. Whether for good or evil, the application of heat or cold to the whole surface is a potent measure, and one that ought not to be recklessly resorted to, more especially in cases of great susceptibility, involving such excitability of the nervous centres as often co-exists with fairly good health in a weakly body.

CHINESE MEDICINE.

A CORRESPONDENT of the *Columbus Medical Journal*, in an interesting letter regarding medical practice in China, says:

"When a child is born, the umbilical cord is measured to the top of the child's head, cut from the placenta at that place, and when this mass of decaying cord loosens from the child, it is sold to the druggist. Cat's heads and many other disgusting things are purchased by the same functionary. The body of a still-born child, provided said child is a first-born and a son, is supposed to contain medicinal properties.

"With such a pharmacopeia, what can we expect in the profession? We find exactly this: A set of ignorant, superstitious men, who do great harm, and if they do any good it is purely accidental.

"I give below the translation of a prescription, which was written by a native doctor for a man who had applied to him with chronic dysentery:

℞ Powdered gentian,
" catnip leaves,
" root of taraxicum,
" root of white ginger,
" smilax,
" black pepper,
" root of persimmon tree,
Of each quantity sufficient to half-fill a wine-glass.
Powdered rhubarb,
" digitalis,
Calomel.
Of each as much as can be held between the thumb and forefinger.
Three inches of umbilical cord, powdered.
One snake skin, powdered.
One cat's head, fresh if possible.
Sig. Boil all these in five quarts of water for three hours; cover the patient with many quilts, and cause him to drink all the medicine within thirty-six hours, as hot as it can be swallowed.

"I have found prescriptions very near like this one in the hands of patients suffering from leprosy, pneumonia, phthisis, small-pox, paralysis, typhoid fever, etc., proving, as I believe, that their treatment is entirely haphazard.

"Gynæcology and obstetrics are not practised at all by the doctors, the seclusion in which the women live in that land rendering it impossible.

"Surgery is practised in the same barbarous and ignorant manner which we have noticed in their general therapeutics. I will give one instance which fell under my observation. I saw a surgeon drive three steel spikes, about a finger in length, into a rheumatic knee. Of course the result was an anchylosed joint. The patient endured the operation with great fortitude, having no anæsthetic."

THE INFLUENCE OF DRUGS ON NURSLINGS WHEN ADMINISTERED TO THEIR NURSES.

FEHLING has recently, we learn from the Paris correspondent of the *British Medical Journal*, studied experimentally the effects on nurslings of certain drugs given to the women who suckled them. When doses varying from two to three grammes of salicylate of soda were administered to the nurse, every time that a child was suckled within an hour after the administration of the dose the salicylate appeared in its urine.

After an interval of twenty-four hours there remained no trace of the drug. When the child was suckled very soon after the medicine had been taken, the salicylate could not be found in its urine. Elimination was completed at the same time in the mother and the child. With iodide of potassium the results were the same. The milk, when analyzed, gave the characteristic reaction. In the infant, elimination lasted seventy-two hours, in the mother forty-four. After twenty-four hours, the milk still contained iodide of potassium. With ferrocyanide of potassium, reaction was very pronounced in the maternal urine, but absent in the child's. Prolonged applications of iodoform upon vaginal and vulvar wounds of women in parturition, after prolonged use, generally resulted in iodine being found in the milk and urine of the mother, but not always in the urine of the infant. The child was never indisposed, even when iodoform was used to dry up the umbilical cord. There was only a small quantity of mercury transmitted through the milk of a nursing mother, and its presence was not constant. It appeared that the food of wet nurses — even acid fruit-juices and vinegar — had no influence on their nurslings. Thornhill had stated that he observed prolonged sleep occur to children after administering to their wet nurse such narcotics as tincture of opium in doses of from twenty to twenty-five drops. Fehling observed neither prolonged sleep nor constipation in the children. Hydrochlorate of morphine or chloral, in tolerably strong doses, did not affect the suckling.

Subcutaneous injections of moderately strong solutions of sulphate of atropine produced very pronounced symptoms in the mother, and dilatation of the pupil in the infant, which disappeared in twenty-four hours. This substance should, therefore, be employed in very feeble doses. In a very great majority of cases, the milk of a woman attacked with fever had no influence upon the nursling. In those rare cases, when the temperature reaches 104°, the variations in the child's temperature were identical with those of the mother. In some instances, children had died of intestinal catarrh, where the mother's milk could be the only cause of the affection. Bumm has observed, in a case of inflamed breast, the passage of the micrococcus from the milk into the digestive apparatus of the child.

ABOUT GLYCOGENESIS.

REPLY TO DR. LIEBMANN.

THE courteous correspondent who writes from Augsburg, Germany, to last week's JOURNAL (page 219), seems strangely to have misunderstood the article on page 66 of the present volume, to portions of which he takes exception. The veriest tyro in physiology knows the conversion of starch into glucose in the alimentary canal. There is no doubt as to the absorption of glucose as such, but what is its immediate destination? It cannot all be utilized as fast as produced, nor is any excess immediately excreted as glucose by the kidneys, at least in normal states of the economy. A part, it is true, disappears in the intestinal canal by reason of its transformation into lactic and butyric acids (Lehmann) and a part may, under some circumstances, escape as sugar in the fæces; an inconsiderable amount may be absorbed by the lacteals, and with the lymph and chyle, enter the general venous circulation; the far greater part ingested, however, is taken up by the radicals of the portal vein, and is subjected to the action of the liver.

What prevents undue saccharification of the blood? What, when a highly amylaceous diet is used, keeps the due proportion of 1 to 2 per 1,000 of sugar in the circulating fluid, saves the system from being flooded by carbo-hydrates and the kidneys from all the evils attendant on persistent glycosuria?

Here we see the importance of the function exercised by the liver. Although an excess of sugar may enter the portal circulation, the liver, that watchful janitor and steward, will not (under normal conditions) allow any excess to enter the general circulation. In other words, it arrests the further march of the glucose of the portal circulation by storing up in its cells the saccharine material in some

colloidal form, which, without reconversion into glucose, is incapable of further diffusion. To this colloidal substance whose presence in the hepatic cells is capable of demonstration, Claude Bernard gave the name of *glycogen*, Charles Rouget of *zoamyline*. It is by virtue of this "sugar-detaining and sugar-assimilating function" (to quote Pavy's words) that the blood of herbivora contains no more sugar than the blood of carnivora.

Hence, as to the fact of the fixation by the liver of amyloid material (glycogen), which, under some (if not under *normal*) circumstances, is easily reconvertible into glucose, all authorities are at the present day agreed. So far, Claude Bernard's great discovery stands unquestioned. As for the manner of final disposal by the organism of this liver-starch, there is a difference of opinion. The older view — that of Claude Bernard — was stated in the article in the JOURNAL before referred to (see page 66). This view is supported (as there stated) by the argument from analogy. In brief, the liver is a reserve depot of saccharine material, which it yields up to the circulation as the wants of the organism require. All the sugar utilized by the economy must first have undergone the action of the liver, which constantly maintains that minimum amount of sugar in the blood which characterizes health. Despite the objections which may be alleged to the Bernardian theory as here stated, the probabilities seem to us in its favor, and (to quote the cautious words of Foster, in his "Physiology,") "it is not as yet disproved." Even Pavy, who has done more than any other experimental physiologist to weaken the glycæmic doctrine, as propounded by Bernard, owns the absurdity of the view that the liver can go on a whole lifetime assimilating glucose without continually restoring it to the organism, and admits that in some form unknown to him, the zoamyline is constantly given back to the tissues to be utilized for force-production and histogenesis.[1] — [ED.]

[1] See especially Pavy's "Lectures on Diabetes" in the London Lancet, 1878.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 28, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	700	322	30.66	13.86	20.86	1.54	4.76
Philadelphia	971,363	402	173	21.84	11.76	14.92	3.84	2.16
Brooklyn	690,000	—	—	—	—	—	—	—
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	179	76	31.69	14.69	25.42	2.20	3.39
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	—	—	—	—	—	—	—
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans	238,000	—	—	—	—	—	—	—
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	—	—	—	—	—	—	—
Pittsburgh	190,000	—	—	—	—	—	—	—
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	55	26	30.94	20.00	20.00	—	1 82
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	19	5	21.04	15.78	10.52	—	—
Charleston	60,145	—	—	—	—	—	—	—
Worcester	68,383	—	—	—	—	—	—	—
Lowell	64,051	27	15	34.30	2.70	29.60	3.70	—
Cambridge	59,960	23	8	21.75	13.05	8.70	—	8.70
Fall River	56,863	32	16	43.82	9.39	28.17	6.26	3.13
Lynn	45,861	20	9	30.00	5.00	15.00	10.00	—
Lawrence	38,825	—	—	—	—	—	—	—
Springfield	37,577	—	—	—	—	—	—	—
New Bedford	33,393	12	3	41.65	8.33	33.33	8.33	—
Somerville	29,922	—	—	—	—	—	—	—
Salem	28,084	—	—	—	—	—	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	—	—	—	—	—	—	—
Taunton	23,674	11	2	18.18	—	—	9.09	—
Haverhill	21,795	—	—	—	—	—	—	—
Gloucester	21,713	5	1	—	—	—	—	—
Brockton	20,783	8	3	25.00	37.50	—	12.50	—
Newton	19,759	—	—	—	—	—	—	—
Malden	16,407	6	3	16.66	16.66	—	—	16.66
Fitchburg	15,375	—	—	—	—	—	—	—
Waltham	14,609	3	—	—	33.33	—	—	—
Newburyport	13,716	—	—	—	—	—	—	—
Northampton	12,896	6	3	66.66	—	50.00	16.66	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 1,508: under five years of age 665: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 434, consumption 202, lung diseases 78, diarrhœal diseases 291, diphtheria and croup 54, typhoid fever 42, whooping-cough 22, malarial fever eight, cerebro-spinal meningitis seven, measles five, erysipelas three, scarlet fever two. From whooping-cough, New York nine, Philadelphia six, Providence three, Nashville, Lowell, Taunton and Brockton one each. From malarial fevers, New York seven, Philadelphia one. From cerebro-spinal meningitis, New York and Fall River two each, Philadelphia, Nashville, and Lynn one each. From measles, New York four, Boston one. From erysipelas, New York two, Providence one. From scarlet fever, New York and Providence one each.

In the 14 cities and greater towns of Massachusetts, with a population of 784,210 (population of the State 1,941,465), the total death-rate for the week was 22.88 against 24.21 and 24.56 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending August 14th the death-rate was 18.9. Deaths reported 3,300: infants under one year of age 1,218: acute diseases of the respiratory organs (London) 150, diarrhœa 531, measles 54, fever 44, whooping-cough 33, scarlet fever 30, diphtheria 26.

The death-rates ranged from 12.5 in Derby to 26.9 in Cardiff; Birkenhead 24.1; Birmingham 17.4; Hull 13.8; Leeds 18.5; Leicester 20.9; Liverpool 23.4; London 18.9; Manchester 18.1; Nottingham 15.8; Sheffield 17.6.

In Edinburgh 17.2; Glasgow 19.1; Dublin 20.8.

For the week ending August 14th, in the Swiss towns, there were 26 deaths from consumption, diarrhœal diseases 16, lung diseases 10, typhoid fever five, puerperal fever, diphtheria and croup each two.

The death-rates were: at Zurich 11.5; Geneva 13.1; Basle 15.5; Berne 17.1.

The meteorological record for week ending August 28, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Aug. 28, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, ..22	30.015	59.3	67.0	50.2	75.0	61.0	66.0	67.3	N.E.	E.	N.W.	8	16	10	C.	C.	C.	—	—
Monday, .. 23	29.903	63.8	81.3	49.3	71.0	57.0	70.0	66.0	W.	S.E.	W.	12	6	6	C.	C.	C.	—	—
Tuesday, ..24	29.965	71.7	84.8	58.0	76.0	52.0	86.0	71.3	W.	S.W.	N.E.	3	8	4	C.	F.	O.	—	—
Wednes.. 25	30.023	62.1	66.4	59.1	95.0	74.0	88.0	85.7	N.E.	N.E.	N.	18	20	10	R.	O.	C.	—	—
Thursday, 26	29.914	71.7	84.8	56.5	87.0	44.0	69.0	66.7	N.W.	W.	W.	8	13	12	C.	C.	H.	—	—
Friday, ..27	29.889	76.8	90.4	65.8	79.0	42.0	79.0	66.7	N.W.	W.	W.	8	8	10	C.	C.	C.	—	—
Saturday, 28	29.846	72.0	81.8	65.4	84.0	64.0	87.0	78.3	N.W.	S.E.	S.W.	10	6	1	C.	C.	C.	2	0.02
Mean, the Week.	29.936	68.2						71.7											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 28, 1886, TO SEPTEMBER 3, 1886.

CRAMPTON, L. W., captain and assistant surgeon. Relieved from further duty at Bellevue Rifle Range, and granted leave of absence for one month to take effect before rejoining his proper station, Fort Bridger, Wyo. S. O. 108, Department of the Platte, August 28, 1886.

WOOD, L., first lieutenant and assistant surgeon. (Recently appointed.) Ordered to report by letter to the commanding general, Department of Arizona, for assignment to duty. S. O. 202, A. G. O., August 31, 1886.

SOCIETY NOTICES.

AMERICAN PUBLIC HEALTH ASSOCIATION. Fourteenth Annual Meeting. 1886. — The American Public Health Association will convene at Toronto, Canada, Tuesday, October 5, at 10 o'clock, A.M., and continue in session four days. The meetings will be held in Shaftesbury Hall, on Queen Street, West. The Executive Committee have selected the following topics for consideration at said meeting: I. The Disposal of the Refuse Matters of Cities and Towns. II. The Condition of Stored Water-Supplies, and their Relation to the Public Health. III. The best Methods and the Apparatus necessary for the Teaching of Hygiene in the Public Schools, as well as the Means for securing Uniformity in such Instruction. IV. Recent Sanitary Experiences in connection with the Exclusion and Suppression of Epidemic Disease. V. The Sanitary Conditions and Necessities of School-Houses and School-Life. (Lomb Prize Essays.) VI. The Preventable Causes of Disease, Injury, and Death in American Manufactories and Workshops, and the best Means and Appliances for preventing and avoiding them. (Lomb Prize Essays.) VII. Plans for Dwelling-Houses. (Lomb Prize Plans.) Upon the above topics a good number of able papers have already been prepared by well-known sanitary writers. Authors from several sections of the United States, Canada, and England have signified their intention of being present with papers. In addition to papers upon the selected topics, several upon miscellaneous sanitary subjects will be presented for the approval of the Executive Committee, and, if accepted, will be assigned a place on the programme. All persons who propose to present papers must be governed by the by-laws of the Executive Committee.

Concord, N. H. IRVING A. WATSON, *Secretary*.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — SECTION FOR CLINICAL MEDICINE PATHOLOGY AND HYGIENE. Boston, September 4, 1886. — The Section for Clinical Medicine, Pathology and Hygiene will meet on October 13th, and on the second Wednesday of each month thereafter during the season. These meetings have been largely attended during the last five years, and a considerable amount of good work in the departments to which they are devoted has been accomplished. There is a greater interest in questions of hygiene and public hygiene than has been evinced for a long time, and the discussions on the subjects relating to this branch have embraced the purity of water-supply, the sanitary conditions of our homes, the relations of military drill to our school system, as well as several other topics relating to the public health. The condition of medicine may at present be considered to be improving in our city, as there is a wider interest in subjects not only of purely clinical nature, but of the character of general sanitation. The younger men of the profession are more active in our Society meetings than ever before, and this in itself is an indication of great weight in estimating the status of medical science in our city. A noteworthy feature of the last year was the reading of a very interesting and able paper in the Section by one of the ladies of the Suffolk District Medical Society. The Clinical Section has been honored on several occasions by the presence of distinguished gentlemen from other cities, frequently representing special departments in university teaching: who have added greatly to the value of our meetings, and to whom the Section owes much of interest in its discussions. The discussions in the Section have been fully reported in the medical journals, and have brought the efforts of the members to the attention of a large circle of interested readers. Members of the profession or others having papers to present, or desiring to exhibit instruments, appliances or specimens are requested to send the titles of subjects as early as possible to

ALBERT N. BLODGETT, M.D., *Secretary*.
138 Boylston Street, Boston.

F. I. KNIGHT, M.D., *Chairman*.

OBITUARY. — DR. ALBERT H. CROSBY.

Dr. Albert H. Crosby of Concord, N. H., died suddenly of apoplexy at the house of his son-in-law, in Exeter, September 5. He was the eldest son of the late Prof. Dixi Crosby, and was born in Gilmanton, April 23, 1826. He graduated from Dartmouth College in 1848, studied law with his uncle, the late Hon. Nathan Crosby of Lowell, and at the Harvard Law School, and, after admission to the bar, practised in Francestown, N.H., and New York City. Law not proving congenial to his tastes, he returned to Hanover, and studied medicine under the instruction of his father, and received a degree from Dartmouth College in 1860. He located at Wells River, Vt, and removed to Concord, where he continued to reside until his death. In 1862, Dr. Crosby was appointed assistant surgeon of Columbus College Hospital, Washington, and was subsequently detailed as surgeon of the 13th regiment, Veteran Relief Corps, and was for a time one of the medical officers of the 6th New Hampshire regiment. In the latter part of 1863 he was assistant to his father in the medical bureau of the provost marshall's office of New Hampshire, and the following year was appointed post-surgeon, with headquarters in Concord. Dr. Crosby was one of the local board of medical pension examiners nearly all the time since the close of the Rebellion, physician to the State-prison for sixteen years, member of the school board and physician to St. Paul's school for many years. He was one of the most eminent physicians and surgeons in the State, his services in consultations being in great demand.

BOOKS AND PAMPHLETS RECEIVED.

The Prevention of Insanity. By Gustavus Eliot, A.M., M.D., New Haven, Conn. (Reprint.) Hartford, Conn. 1886.

Electrolysis in Gynecology; with a Report of Three Cases of Fibroid Tumor successfully treated by the Method. By Franklin H. Martin, M. D., of Chicago, Professor of Gynecology in Chicago Polyclinic, etc. Read in the Section of Obstetrics and Diseases of Women at the Thirty-Seventh Annual Meeting of the American Medical Association, May 5, 1886. With Discussion by Ely Van de Warker, of Syracuse, N. Y.; Robert Newman, of New York City; George F. Hulbert and George J. Engelmann, of St. Louis, Mo. Also Supplementary Paper citing Two Cases of Fibroid Tumor treated by Electrolysis, by J. N. Freeman, M.D., of Brooklyn, N. Y. Chicago, 1886. (Reprinted from the Journal of the American Medical Association, July 17 and 24, 1886.)

Original Articles.

THE EFFECTS OF MILITARY DRILL ON BOYS.[1]

BY PROF. D. A. SARGENT, M.D., OF HARVARD UNIVERSITY.

LONG before the Civil War, many of the Southern States were pursuing the European plan of having State Academies devoted to military science.

At the outbreak of the Rebellion, while the North was obliged to look to the small nucleus graduated from West Point for its officers, the South had, in addition, the well-trained students of the State colleges to command its regiments. In the opinion of military men, the early successes of the Southern army were largely due to this fact.

Many of our Northern citizens were so much impressed with the utter lack of military training on the part of our educated young men at the beginning of the war, that efforts were made as early as December, 1861, to introduce infantry drills in the public schools. The matter was acted upon by the New York and other City Boards of Education, and referred by them to special committees. In the January following, Governors Andrew and Morgan recommended legislative action on the subject.

In 1863, military drill was established in the Boston schools. At the termination of the war, it was considered desirable by the general government that some of the army officers not otherwise employed should be detailed to teach the students of such colleges as desired it, so that educated men might have a better knowledge of military discipline and drill than they have hitherto had in these institutions.

Many of our schools and colleges applied to the government for officers, and entered upon the experiment of making military drill a part of the regular curriculum. How far this experiment has succeeded from the military point of view, I must leave those who are interested in our volunteer militia to answer.

I simply wish to call your attention to the fact that the primary object of establishing the drill in our schools and colleges was a professional one — that is, to give instruction in military tactics to educated young men, in order that they might be of service to the country or community in case of an emergency. The war gave an incentive not only to the practice of military drill, but it also furnished a great stimulus to all forms of physical exercise, and especially to athletic contests and games.

Within the past few years, physical training has received a new impetus. A large number of school, college, and city gymnasia have been built, and athletic games have obtained a strong hold on public attention.

As the occasion which gave rise to a call to arms grows more remote, and the real object of the drill loses its significance, the advocates for its maintenance in the schools claim for it superior advantages as a physical exercise. In the city of Boston, the committees to whom the subject of military drill in schools has been referred have placed considerable stress upon this point.

Allow me to quote a few lines from their published reports, as compiled by the Principals of the public Latin and High Schools for boys. In 1873 the Committee reported as follows:

"Your Committee believe that the drill, as now carried on, proves to be not only the *best* for physical exercise for these schools, but that, at the same time, it inculcates a more manly spirit in the boys, invigorates their intellects, and makes them more graceful and gentlemanly in their bearing."

In the report for 1874 there is a similar statement. In 1875 the Committee state:

"We trust that the drills will be kept up, believing that committees having them in charge will see that no form of gymnastics could be substituted from which the boys would derive such benefit."

In 1880 the Committee say:

"The establishment of the military drill is one of the few provisions made by the School Board for the physical training of the pupils under its charge, and no one who has observed the soldierly bearing of the members of our school battalions can have any doubt of its value as a means of securing a full and symmetrical development of the physique."

Notwithstanding the fact that half of the members of these committees were physicians, I shall beg to differ with them absolutely as to their conclusions concerning the physical effect of the military drill upon boys.

In order that we may approach the discussion of this subject more intelligently, let us inquire briefly into the physiology of exercise, and consider some of the facts which observation and experience have determined.

Exercise in its simplest sense may be defined as muscular movement produced by muscular contraction. According to the physiologists, "the property of contractility is inherent in the muscular substance, but in normal life the manifestation of this property is immediately determined through the influence of the nervous system. . . .

"A nervous impulse originating at the brain or spinal column travels along the nerves to their terminal expansions in the muscular fibres; on its arrival at the muscular fibre, the nervous impulse is converted into a muscle-impulse. . . . Between the reception of the nervous impulse and the initiation of the visible contractile movement an interval elapses, known as the 'latent period,' which (according to Helmholtz) is probably occupied by molecular changes in the fibre preparatory to its alteration in form. At the close of the latent period the muscle-impulse is succeeded by a wave of contraction. . . . The contraction of the individual fibres produces changes in form of the entire muscle, shortening the distance between its two extremities by increasing its thickness, and slightly reducing its bulk.

"In the voluntary muscles (according to Weber), each contraction is compound in character, being composed of a series of rapid contractions, due to an equally rapid succession of nerve-impulses."

During muscular contractions certain chemical changes take place in the muscle substance, although the exact nature of the metamorphosis is not known. It is known, however, that the blood escaping from muscles in action is much darker than the venous blood of muscles in repose, and that it contains a much greater proportion of carbonic acid.

It is also known that a greater amount of oxygen is absorbed by the muscle during the period of contraction, and Gaskell's experiments have demonstrated that the flow of blood through muscle is increased at the time of its shortening.

[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Massachusetts Medical Society, Suffolk District, June 8, 1886.

Thus we see that the simplest muscular movements involve a molecular change at the nerve-centre in which the movement originates, in the nerve-fibre that transmits the impulse, in the muscle-fibres that contract, and in the bloodvessels that dilate in response to the stimulation. The experimental researches in the physiological laboratory on a single muscle have given us an epitome of what should take place throughout the system at large, in order to realize the best results from exercise.

The consecutive action and harmonious relation of the nervous, muscular, and vascular systems must accompany every effort to improve the physique and render the individual energetic, healthy, and strong. How to attain this three-fold result is the problem that the instructor of physical training has before him.

If you lift your arm in this manner (flexing the arm at the elbow), it is because the biceps muscle contracts, but the fibres are not hard and tense, and there is little evidence of an increased circulation. This would be termed a movement — almost a passive movement — and is what might be first advised to restore efficiency to the arm of a paralytic, or to preserve a single group of muscles from atrophy. This is the basis of the Movement Cure as founded by Ling, of Sweden.

If you should contract the muscles of the arm rapidly and energetically, you would give exercise to nerve-centres and nerve-fibres, but the muscles would not be efficiently used, and the blood-supply would not be much augmented.

By pursuing this method, the nervous system can sometimes be improved and the muscles made responsive, but activity will be attained at the expense of endurance. This is the basis of the Delsart system of physical culture now so popular in the schools of elocution.

Now grasp a heavy dumb-bell or weight in the hand, and elevate it slowly to the shoulder. In so doing you bring about an energetic action of the flexor muscles, but the nervous system is not especially active, and though the bloodvessels of the arm are gorged with blood, the circulation is not much improved. By pursuing this method the muscles can be increased in size and strength, but the individual, though strong, will lack heart and lung power, and be constitutionally weak. This is the result of the Heavy Weight System as formerly practised and advocated by Dr. Winship.

Now if the arm is alternately contracted and relaxed while using a lighter weight, the blood in the arteries is pushed forward into the veins, and through the veins into the heart. When it arrives at the heart, that organ is stimulated to contract with greater energy, and a proportionally greater amount of blood is sent back to the arm. In following this course, the bloodvessels in the parts used would be greatly increased in size and capacity, but in case many muscles were called into play at the same time, the brain and central nerve system would lack their due share of blood, and power to continue the effort for any length of time would be wanting. This, in a word, is the chief defect in the system of Light Gymnastics, advocated so fervently some twenty years ago by the late Dr. Dio Lewis.

These four methods of exercise, when elaborated and applied to the whole body, represent, I say, the fundamental principles of four great systems of physical training, each method being admirably adapted to meet the special wants of certain individuals, but wholly unreliable, and in many cases followed by fatal consequences when applied indiscriminately to all classes in the community.

To select at once a system of exercise that will do no harm to any one, and yet be beneficial to all, is a difficult task, yet we shall come nearer doing the greatest good to the greatest number if we follow what may be termed the physiological method. As near as I have been able to ascertain them, the essential requisites of a good exercise may be summed up in the following suggestions:

(1) The person should be sufficiently interested in the exercise to give it his attention in order to secure the necessary volitional power to start the movement. Any exercise executed in a lifeless way is of little benefit to nerve or muscle in a healthy condition.

(2) There should be a weight or resistance to overcome in order to bring out the working force of the muscle, the theory being that the muscles were not created merely to move the parts to which they are attached, but to do service and help man bear his burdens. In using a weight, the muscle gradually acquires the force with which it tries to contract.

(3) The exercise must be performed with sufficient vigor and rapidity to engage the energetic contraction of the muscles employed. When this is done, old tissue is broken down, and its place is supplied with new material in increased quantity, thus augmenting the size and strength of the muscles. The rapidity of the movement puts a limit to the weight used, and the alternate contraction and relaxation of the muscles assists the circulation of the blood in the parts employed.

(4) As many muscles as possible must be brought into action in order to secure a full-orbed and harmonious development of the whole body. One-sided development is usually attained by robbing some other part of its just share of the body's nutriment. It is apt to be accompanied by a functional disturbance of one or more of the vital organs, by inducing malformations of the thorax, or it is likely to lead to the straining of parts that are weak, by gauging their strength by parts that are strong.

(5) A sufficient number of muscles should be called into action at one time to stimulate the action of the heart and lungs and increase the circulation and respiration. This is one of the most important considerations to bear in mind in regard to exercise. The more muscles a person can use at one time, and the more rapid and extensive the movement, the greater the muscular consumption of oxygen and elimination of carbonic acid. In order to sustain this activity in the muscles, a greater amount of oxygen must be taken in, and a greater amount of carbon-di-oxide must be given off from the system. This is accomplished through the respiration. "If a man walks one mile an hour, he breathes twice as much air as when lying down; if he walks four miles an hour, he breathes four times as much, and if six miles an hour, seven times as much." He takes out of this inspired air an increased ratio of oxygen, and eliminates nearly the same proportion of carbonic di-oxide during expiration. To keep up this increased respiratory activity and to aid the heart in removing the waste material and hastening forward the new, the limbs and walls of the chest must be absolutely free from any ligatures or constrictions. The slightest interference with the

action of the respiratory muscles at this time embarrasses the functions of the lungs and heart. The chief advantage of exercises that give employment to many muscles at one time is that by increasing the respiration and quickening the circulation, they improve the health and strength of all parts of the body.

(6) As a "latent period" precedes the contraction of a muscle, so a momentary period of rest should, as far as possible, precede movement in exercise. This is best secured where there is an alternation in the movements, as in walking, running, rowing, etc. All tetanized movements, such as holding weights, standing in a constricted position, etc., tend to impair the tone of the muscles by interfering with the nutrition of both muscles and nerves.

(7) The exercises of the young should be of such a composite nature as to bring about the co-operation and co-ordination of the muscles. This involves principally the training of the central nerve system. All gymnastic sports and athletic games that require skill, dexterity, coolness, courage, and presence of mind, are included in this list, and are exceedingly valuable to any system of physical training, as adjuncts in the development of character.

My principal objection to military drill as a physical exercise is that it does not to any extent meet the physiological demands of the body as set forth in the seven observations just referred to. In other words: It is not of sufficient interest as a means of physical development to arouse any moral earnestness and enthusiasm on the part of the boys. The exercise of the manual is not performed with sufficient force and rapidity to engage the energetic contraction of the muscles employed. It is essentially a one-sided exercise, bringing into excessive action the elevators of the right scapula, the deltoid, biceps, flexors of the fore-arm, wrist and fingers of the right side, while the other muscles, excepting the legs on parade days, do not get sufficient employment to keep them in good condition. It does not increase the respiration and quicken the circulation to a sufficient extent to secure the constitutional benefits that should accrue from exercise.

During the drill the clothing is buttoned close around the chest, and natural respiration is hindered. The muscles are not alternately contracted and relaxed, but are tetanized or kept in a state of prolonged tension. This, as we have seen, not only impairs the tone of the muscles used, but it also puts an additional strain upon the brain and nervous system at a time when both should be as much relieved as possible. Finally, the mere exercise of the manual of arms does not give sufficient breadth and scope of movement to secure the co-operation of the muscles, and as a training for the central nerve system, it is of little or no value.

Coolness, courage, presence of mind, and that rapid and responsible exercise of judgment in emergencies, so valuable to the man of business, as well as to the soldier, are not developed by the drill itself, though I will admit that other moral attributes, such as obedience, patience, fortitude, and forbearance, may be brought to a high degree of perfection. The community at large have long entertained the idea that there was something about military drill that made young men erect, or, as the committee have been pleased to term it, giving them a graceful and manly bearing.

I dislike to take from the drill one of the strongest attributes that has commended it to parents and teachers, but unless I have been misled in my observations, there is nothing in the drill itself that tends to make one erect or graceful. On the other hand, I am prepared to maintain that it tends to make him stiff and angular in his movements, as well as to droop and round his shoulders.

This fact was long since brought to the attention of military authorities, and a set of calisthenic exercises or free gymnastics have been incorporated into all of the treatises on military tactics, to correct this tendency. I refer to what is familiarly known as the "setting-up" drill. Upton says, in his manual of "United States Army Infantry Tactics": "As the importance of 'setting up' cannot be over-estimated, the exercises must be often recurred to, and all soldiers will be frequently practised therein."

Notwithstanding this recommendation, I have yet to learn of a single military school in this country, the National School at West Point excepted, where these exercises are practised assiduously. They are irksome and unpopular, like all corrective measures, and are consequently never insisted upon.

There is another method, commonly known as "tailorizing," by which youthful soldiers may easily acquire a full chest, square shoulders, and a straight back. The results may not be as enduring, but they help out on parade day, and undoubtedly contribute something to the "manly bearing" that is so often spoken of. The moral is: Do not waste your admiration over the military figure until you see it with its coat off.

In reference to the gracefulness that is thought to characterize the movements of young cadets, I can only say it is not the outcome of drilling and marching. The soldier is trained to square corners, straight platoons, and angular movements. Curves and embellishments are not encouraged in speech or in action. If you would account for the graceful poise of our National cadets, you must visit West Point in summer, and see them from one to two hours a day in charge of the dancing master.

Having considered at some length what the drill does *not* do for boys, let me invite your attention to a brief consideration of some of the things that it does do. Here let me forestall any impression that my previous remarks on this subject may have left, and state that I do not think that military drill, as conducted in the Boston schools, is injurious to a strong, full-grown, healthy boy, except in a negative way. That is, it does not furnish him the physical training he needs for the maintenance of vigorous health, and the acquisition of a complete or symmetrical development. But those of you who have had the pleasure of examining school boys, or of looking over their measurements or photographs, will bear me out in saying that the strong and well-developed boys are largely in the minority.

The pupils attending our public and private schools represent nearly every phase and condition in life. Some are well nurtured, others are not. Some have favorable hygienic surroundings at home, others are subjected to unhealthy influences. All bear the stamp of a good or bad inheritance, and the strong and weak points of the parents show themselves in the physique as readily as they do in mental characteristics.

As no two minds are alike, so no two bodies are

alike. But growing out of this great diversity of shapes and sizes, there is a figure around which nature tends to range those of a certain age, height, or weight (according as either is taken for the standard). This is termed the mean or typical boy for a given age, height, etc. Any marked divergence from this standard is readily detected by a casual observer. My attention was long since called to what I think may be termed the prevailing weaknesses or defects in the school boy's and student's physique.

These are a drooping of the head, flatness of the chest, narrowness of the waist, and an exaggeration of the normal or physiological curves of the spine, and I might add to this number, though it is not quite so common in boys as in girls, lateral curvature of the spine. These defects, I say, are so apparent, that it does not take a practised eye to detect them. They attract the attention at once of any one who cares to examine the figures.

The drooping of the head and flatness of the chest may be accounted for by the increased prevalence of myopia, tightness of clothing, and the pressure of the school desk or table on the lower ribs and sternum. The hollowness in the back is partly due to the fact that it is a compensating curve, but more probably attributable to the weakness of the trapezii, rhomboidii, serati, and latissimus dorsi muscles.

The smallness of the waist is undoubtedly largely due to inheritance, and to the fact that the youth of the present day make very little use of the muscles of the waist and loins. Lateral curvature of the spine may be caused in many ways; by defective seats, bad positions in writing and drawing, standing for a long time on one leg, carrying weights, or using one arm more than another, etc.

Personally, I do not put particular stress upon these malformations, if they can be discovered in time. Nearly all of them can be corrected by judicious exercise. If allowed to increase, however, they invariably lead to spinal disease, or to some functional disturbance of the heart, stomach, or lungs, followed sooner or later by structural changes in these important organs.

Whatever the original cause of these physical defects may be, the immediate cause is a weakness of the supporting muscles.

After the body has once acquired a bias in the wrong direction many exercises otherwise beneficial are likely to be injurious. Among this number are horseback riding, rowing, lawn tennis and military drill. In order that you may see how the last named exercise can prove injurious to imperfectly developed boys I wish to call your attention to the elastic nature of muscular tissue.

In order to be as brief as possible I shall simply quote extracts from the experimental researches described by Rosenthal on this subject, in his admirable treatise on "Muscles and Nerves."

"A muscle dissected from the body is easily extended by a weight, and is extended in proportion as the weight attached is heavier. . . . The law of elasticity for inorganic bodies is: 'The tension is directly proportionate to the length of the body extended and to the amount of the extending weights; and that it is also proportionate in inverse ratio to the diameter of the extended body.'" . . .

"It has been found, however, that soft organic bodies, like muscles, are capable of far greater extension than are rigid, inorganic bodies of equal length and diameter and under the application of equal weight. But the organic body also exhibits another peculiarity."

"If a weight is attached to a steel wire or some other similar body, the latter extends and retains its new length so long as the weight acts upon it; but as soon as the weight is removed the steel resumes its original length. It is not so in the case of organic bodies. When the weight is removed from an organic body it immediately becomes shorter, but does not entirely revert to its original length; it attains the latter very gradually and in the course of many hours. This phenomenon is known as the gradual extension of organic bodies." . . .

"Muscle, in common with all soft bodies, exhibits another variation from the bearing of rigid bodies. That is, muscles are comparatively more extensible by light than by heavy weights. For instance, if the extension of a muscle when carrying ten grammes is five millimetres, when carrying a weight of twenty grammes it is not ten millimetres but only eight; when carrying thirty grammes it is only ten millimetres, and so on."

Another striking fact in connection with the physiology of the muscles has been brought out by the experiments of Weber. He has proven conclusively that muscle is further extended by the same weight when it is in a state of activity than when it is quiescent. Here again we have the experiments of the physiological laboratory confirming the facts that have been brought under frequent observation in the gymnasium. We can now readily understand, how carrying the head forward would soon extend the muscles of the neck, how carrying a gun, though a light one, with the same arm for any length of time would gradually extend the muscles, and elongate the arm, droop the shoulder and crook the spine. This is, in fact, what military drill tends to do in all cases, and what it invariably does do when there is a bias in that direction, when the boy is tall and slender, or the muscles weak and flabby, and there is no effort made to correct the evil tendency.

If it is deemed advisable to make military drill a department of school instruction, I see no reason why a system of corrective exercises cannot be introduced as an accompaniment. If, on the other hand, military discipline alone is required, this can easily be applied to a system of class gymnastics or free exercises, as shown in the schools of Germany.

After taking the most favorable view possible of military drill as a physical exercise, we are led to conclude that its constrained positions, and closely localized movements do not afford the essential requisites for developing the muscles, and improving the respiration and circulation, and thereby improving the general health and condition of the system. We must further conclude that in case of any malformation, local weakness or constitutional debility, the drill tends, by its strain upon the nerves and prolonged tension on the muscles to increase the defects rather than to relieve them.

Finally, if the ultimate object of the drill was to prepare young men for the life and duties of a soldier, we should be forced to conclude that the drill itself would still be defective as a means of developing the chief requisites for men in that profession.

This defect, we are pleased to state, is recognized by the great military nations of Europe, and measures

are taken to give all the recruits from three to twelve months' gymnastic training to develop them as *men*, before they are expected to conform to the requirements of the soldier.

MILITARY DRILL AND GYMNASTIC TRAINING IN PHYSICAL CULTURE.[1]

BY E. M. HARTWELL, PH.D., M.D. OF JOHNS HOPKINS UNIVERSITY.

I FEEL some embarrassment in standing here as an advocate of the superiority of gymnastics over military drill as a means of physical training for schoolboys, since, in so doing, I am obliged to dissent from the views of General Moore, who was formerly my commanding officer. I suppose that as one of his orderly-sergeants in the Latin School Battalion, I passed the climax of my self-importance. I thought then that the drill was a very good thing. I think now that it did the other boys good, and that it did me good, but I am compelled to think, as the result of my reading, observation and experience, that while much good may be accomplished through military drill in boys' schools, very much more good can be attained through a well-devised and intelligently-managed system of gymnastics.

It is a noteworthy fact that physical training has always owed much to lessons learned in war. Under the sting of defeat, or the stimulus of victory, the most enlightened and the rudest nations have alike been impelled to give to bodily training a place in their schemes for the education of their youth. It was in the half century following the victories gained by the Greeks over the Persians, that Greek gymnastics saw their palmiest days. It was then that the gymnasia furnished the finest models for the noblest specimens of the sculptor's art. Although the Greek training was chiefly general and educational in its aims, it embraced certain exercises of a martial character. The Norman archers made such an impression upon the English at Hastings, that centuries elapsed before English law-givers ceased to legislate for the training of the people in "Shooting."

An English law passed in 1388 required servants and laborers "to have Bows and Arrows and use the same the Sundays and Holydays, and leave all playing at Tennis or Football and other Games called Coits, Dice, Casting of the Stone, Kailes, and other such importune Games." Henry VIII caused Parliament to enact, in 1511, that "every man being the King's subject, not lame, decrepit or maimed; being within the age of sixty years, except spiritual men, justices of the one bench and of the other, justices of the assize, and barons of the exchequer, do use and exercise shooting in long bows, and also do have a bow and arrows ready continually in his house, to use himself in shooting; and that every man having a man child or men children in his house shall provide for all such, being of the age of seven years and above, a bow and two shafts, to learn them and bring them up in shooting." Each village was, in 1541, required to maintain a pair of archery butts. It would seem that this statute was held to apply to school-boys and collegians. It is noteworthy that certain playgrounds at Eton and Harrow respectively, are still termed "the Shooting Fields" and "the Butts." The English took the lessons of the Crimean War so deeply to heart that, great as is their aversion to gymnastics, they introduced gymnastic drill into the army in imitation of their neighbors on the Continent.

The quickening and shaping influences of the Napoleonic Wars, of the War of Liberation, and of the wars with Austria and France, are clearly discernible as potent factors in the development and organization of the German system of physical training. France has, since 1871, organized an elaborate system of physical training, embracing both gymnastic exercises and military drill in connection with all its public schools for boys.

We in America occupy no exceptional position in this matter, unless it be that we are preternaturally slow to profit by the experience of other nations. The first attempts in America to promote physical training were of a military character. On January 21, 1790, President Washington transmitted to the first Senate of the United States a comprehensive report from General H. Knox, the Secretary of War, on a plan for "a national defense system adequate to the probable exigencies of the United States, whether arising from internal or external causes." The plan called for the enrollment of those liable to bear arms into three classes: the first comprehending the youth of eighteen, nineteen and twenty years of age, to be denominated the advanced corps; the second class including the men from twenty-one to forty-five years of age, to be denominated the main corps; the third class comprehending, inclusively, the men from forty-six to sixty years of age, to be denominated the reserved corps. It failed, however, of adoption, although the need of a well-trained militia had been sharply and abundantly emphasized by the events of the Revolutionary War. The failure was attributed to the great expense and the administrative difficulties which it was believed it would entail.

In 1792, a United States law was passed, which is still in force, I believe, requiring the enrollment of "all able-bodied male citizens of the respective States" between the ages of eighteen and forty-five years. All enrolled citizens are required to be "constantly provided with a good musket or fire locket . . . a sufficient bayonet and belt, two spare flints, and a knapsack, a pouch therein to contain not less than twenty-four cartridges . . . or with a good rifle, knapsack, shot-pouch, and powder-horn, twenty balls suited to the bore of his rifle, and one-fourth of a pound of powder." So far as I know, neither the Boston School Regiment, nor any other regiment, complies with the requirements of this law.

In 1817, in a report on the reorganization of the militia, made to the House of Representatives by Mr. Harrison, it was recommended that "military instruction should not be given in distant schools, but that it should form a branch of education in every school within the United States; *that a corps of military instructors should be formed to attend to the gymnastic and elementary part of education in every school in the United States*, whilst the more scientific part of the art of war should be communicated by professors of tactics, to be established in all the higher seminaries." It does not appear that this scheme, or anything like it, ever received the sanction of law, although it was again brought forward for adoption in 1819.

Meanwhile, the United States Military Academy at

[1] Remarks made at the meeting of the Section in Clinical Medicine, Pathology and Hygiene of the Massachusetts Medical Society, Suffolk District, June, 1886.

West Point, in New York, had been instituted for the professional training of army officers. Yet the bitter lessons of the war of the Revolution had to be enforced by those of the War of 1812 before Congress could be induced to make anything like adequate provision for such training.

At West Point, bodily training, under the heads of military instruction and sword exercise, has received marked attention from the first. Dancing is now regularly taught, and gymnastics and swimming have at times been regular branches of instruction. The United States Naval Academy dates from the year 1845. Both at West Point and Annapolis the course of study is characterized by an extended, varied, and exacting system of bodily exercise, as embraced in the various drills and branches of practical instruction. The absolute control and constant supervision and inspection to which all cadets are subjected, as regards deportment, dress, studies, exercise, recreation, diet, and rest, are productive of a vigorous manliness which is much less uniformly found in the graduates of other institutions.. I am strongly convinced that the best that has as yet been accomplished in the United States in physical training has been accomplished at West Point and at Annapolis, but nothing can be clearer than the fact that only a very small part of the training there in vogue is what is understood as military drill in the Boston schools.

Alden Partridge, captain of engineers in the United States Army, who was for a time Superintendent of the Military Academy, seems to have been the first person to found an institution modelled after that at West Point. Captain Partridge left the Military Academy in 1817, and in 1818 resigned from the military service of the Government. In a lecture delivered by him in 1820 on what he conceived to be the deficiencies of superior education as then conducted, Captain Partridge spoke as follows:

"Another defect in the present system is the entire neglect, in all our principal seminaries, of physical education. The great importance and even absolute necessity of a regular and systematic course of exercise for the preservation of health, and confirming and rendering vigorous the constitution, must be evident to the most superficial observer. That the health of the closest applicant may be preserved, when he is subjected to a regular and systematic course of exercises, I know from practical experience; and I have no hesitation in asserting that in nine cases out of ten it is just as easy for a youth, however hard he may study, to attain the age of manhood with a firm and vigorous constitution, as it is to grow up puny and debilitated, incapable of either bodily or mental exertion."

Captain Partridge opened his American Literary Scientific Academy at Norwich, Vt., his native town, September 4, 1820. In 1825, he removed his seminary to Middletown, Conn., where he remained for three years. He was doubtless impelled to abandon his seminary there from the refusal of the legislature of Connecticut to charter the institution as a college. He was instrumental, in 1834, in rehabilitating the institution at Norwich, which became known as "Norwich University," and in establishing military schools at Portsmouth, Va., in 1839, at Brandywine Springs, Del., 1853, and at Bristol, Pa., in 1853, the year of his death.

A considerable number of military schools and colleges, additional to those above mentioned, were organized before the War of the Rebellion. The more important of them were established in the Southern States, and were in several cases subsidized by the State. This was notably the case in Virginia, South Carolina, Louisiana, Kentucky, and Alabama. The Virginia Military Institute, at Lexington, Va., the Military Institute at Frankfort, Ky., and the Louisiana State Institute, at Alexandria, La., should be mentioned in this connection. It has been estimated that "one-tenth of the Confederate armies was commanded by the *élèves* of the Virginia Military Institute, at Lexington, embracing 3 major-generals, 30 brigadier-generals, 60 colonels, 50 lieutenant-colonels, 30 majors, 125 captains, 200 to 300 lieutenants." General "Stonewall" Jackson was long a professor in the Virginia Military Institute. General W. T. Sherman, of the United States Army, was in 1861 the head of the Louisiana State University, which had been organized on a military basis in the previous year. At the North the military plan of education was chiefly adopted by the proprietors of private schools for boys.

Once the war opened, military drill assumed a new and unprecedented interest in the eyes of school authorities. The educational literature of that period teems with schemes for the introduction of gymnastics and military drill into public school courses. As early as 1861 military drill was introduced into a portion of the public schools in the city of Bangor, Me.; and the State of New Jersey, about the same time, made an appropriation of money for military instruction in her normal school.

Elementary military drill was experimentally introduced into the Public Latin, English High, Eliot, and Dwight Schools for boys in Boston in 1863. It has since been eliminated from the grammar schools, to which class the Eliot and Dwight belong, but has been introduced into all the high schools of the city for males.

There are not far from sixty schools and colleges, in various parts of the country, in whose course of instruction military drill is given a prominent place. Public schools are not included in this number; but in nearly half of the number the military drill is in charge of an Army officer, specially detailed in accordance with Morrill Act of 1862, whose purpose was to promote the organization of State Mechanical and Agricultural Colleges.

The aim of the school system of Boston is, I take it, a general one, namely, to prepare boys and girls to enter with profit, at a later stage of their development, upon courses of special training for their life work, and the question under discussion is not whether military drill, by itself considered, is helpful or harmful, but whether so much of military drill as is laid down for a portion of the school-boys of Boston constitutes an adequate system of physical training.

I freely admit that the setting up drill, the manual of arms, and the marching movements as taught by General Moore are valuable; that they promote healthful growth and development to a limited degree; and that they subserve certain ends of mental and moral discipline. But I hold that they are so narrow, unnatural, and technical that they cannot be made to meet the legitimate demands of a sound system of general physical training. Such gymnastic exercises as you have witnessed here this evening demonstrate very satisfactorily, it seems to me, the superiority of

gymnastic to military drill. But it should be borne in mind that these exercises constitute but a small portion of the exercises which are comprised in any system of school gymnastics worthy to be so designated. It need hardly be said that no comprehensive system of gymnastics has ever been attempted in the Boston schools. No city in the United States, unless it be Kansas City, in Missouri, has as yet worked out or adopted a system of school gymnastics that will bear comparison with the systems now in vogue in the schools of the principal cities of Germany, Sweden, and Norway, France, Switzerland, and Austria.

It will be best to confine our attention to the German system of physical training, and more especially to that in vogue in Prussia.

The German for gymnastics is *Turnkunst* or *Turnen*. *Turnplatz* and *Turnhalle* correspond respectively to our terms out-door gymnasium and gymnasium, which latter ordinarily signifies a building for gymnastic exercises. A gymnasium, in the German sense, is the highest of the secondary schools, and leads directly to the University.

German gymnastics embrace three well-marked fields, or departments, namely, *Volksturnen*, or popular gymnastics; *Schulturnen*, or school gymnastics; and *Militärturnen*, or military gymnastics. The organization of the last two departments is maintained and controlled by the Government for strictly educational purposes; whereas the *Turnvereine*, as the societies of the turners are called, are voluntary associations of a social and semi-educational, but wholly popular and patriotic, nature. The germ of the turning system is to be found in the martial games and exercises of the ancient Teutons.

Volksturnen was the first to develop. It had its beginning in the period of Prussia's deepest distress and humiliation,— the period between the victory of the French at Jena, in 1806, and the War of Liberation in 1813. That turning became a popular institution and a potent factor in the development of Prussia was largely due to "Father Jahn," as the turners call him.

Jahn was an ardent patriot. His strong and rugged nature, and his eager, restless, passionate spirit, qualified him for popular leadership in the movement which he initiated. He seized the idea of making bodily training a force in national regeneration and education, and dreamed and wrote and labored for a free and united Germany.

The turners did notable service in the campaigns against the French, and great enthusiasm for gymnastics was kindled all over Germany. From 1819 till 1842 the turnvereine, as the gymnastic societies are called, were not suffered to exist by the Government.

In April, 1842, the ministers of war, the interior, and education, united in recommending to the King of Prussia the re-introduction of turning. In June following, the King gave his sanction to the proposal of his ministers that "bodily exercises should be acknowledged formally as a necessary and indispensable integral part of male education, and should be adopted as an agency in the education of the people." The King also authorized the establishment of "gymnastic institutes," in connection with "the Gymnasien, the higher middle schools, the training schools for teachers, and the division and brigade schools in the army."

The great majority of German turnvereine have, since 1860, belonged to the organization known as the *Deutsche Turnerschaft*.

The Turnerschaft comprises fifteen circuits, or geographical divisions, within the German Empire and Austria. Each circuit is subdivided into districts (*Gaue*), and each district into societies (*Vereine*). On January 1, 1885, there were 220 *Turngaue* within the Turnerschaft, and the number of vereine within the Turnerschaft was 2,878, an increase of 223 over 1884. The membership in 1885 was 267,854, of whom 114,134 were active turners; or to express it differently, in 2,413 localities there was an *active* member of the Turnerschaft for every 134 of the population. In 1884, 2,409 societies practised winter turning, 353 owned a turnplatz, and 182 owned a turnhalle.

The aim of the Turnerschaft is to promote the interests of turning, as a means to bodily and moral strength. Its members are urged to render turning attractive to boys and apprentices who have passed the school age; to cultivate simple German customs and manners; to cultivate national exercises and games, such as free and class exercises, running, leaping, climbing, casting the weight, hurling the spear, wrestling, fencing, and sword play; to participate in all popular festivals, especially those commemorative of national events, such as the Kaiser's birthday, Sedan day, and the like; to manifest an active interest in useful public enterprises and associations, such as fire and salvage companies, and sanitary corps for the care and transportation of the sick and injured.

The turners are divided into two main sections, namely, boys from fourteen to seventeen years of age, and men. These divisions are subdivided according to their gymnastic ability into squads, or classes, each class being under the lead and guidance of a "foreturner" chosen on account of fitness. Strength alone is not enough. It is the foreturner's business to make his squad as expert as possible, and above all, to secure to each of its members an erect, firm, and graceful carriage of the body.

The General German Turning Festival, as the grand festival of the entire Turnerschaft is termed, occurs at intervals of at least four years. It continues for at least three days, one of which must be Sunday. Six such festivals have been held in different German cities since the first was celebrated at Coburg in 1860. The Sixth German Turning Festival was celebrated at Dresden, July 18–23, of last year. I was so fortunate as to be present during its continuance.

The festival was characteristically German in its object, arrangements, and detailed workings. In the opinion of competent judges a very considerable increase in gymnastic proficiency over that exhibited at any former festival was noticeable.

More than 20,000 turners, including delegations from England, France, Russia, Holland, Switzerland, Austria, Hungary, Sweden, and the United States took part in the street parade, which was reviewed by the King of Saxony from a balcony of his palace on Sunday, the first day of the festival. The grounds set apart for the use of the turners were something more than ten acres in extent, and were situated in the outskirts of the city, adjoining the Grosser Garten, the principal park of the King. Chief among the temporary buildings erected on the Festplatz was the festivall hall, with an estimated capacity for 10,000 people. The main part of this hall was left unfloored, so that in case of unfavorable weather all the heavy gymnas-

tics might take place under cover. As the weather was fine during the entire continuance of the festival, the hall was used chiefly for speech-making and merry-making, and the turning of every description was carried on out of doors on the Turnplatz, which had an area of more than three quarters of an acre.

The most noteworthy gymnastic features of the festival were: The free gymnastics; the class turning of the most proficient turners; the prize turning, and the gymnastic games in which 1,600 girls and 1,200 boys belonging to the Dresden School took part.

The free gymnastics are bodily movements arranged in groups of related exercises, which are executed at command and in unison. In them no apparatus of any kind is made use of. They may be characterized as calisthenics raised to their highest power. The free gymnastics on this occasion included sixteen different movements, and required nearly three-quarters of an hour for their completion. The order and character of the movements had been determined and ordained by the proper committee of the Turnerschaft months before, and the movements had been practised by the different vereine at home, but only there. The turners who took part in the free movements numbered 4,544, and were formed in seventy-one "open ranks" of sixty-four men each, facing toward the front, the distance between the "files" being a full arm's-length. Facing the huge class was a high platform, on which two marvelously expert foreturners first executed each movement in sight of the class, and then, at signals given with a flag by the turnwart in command of the class, and re-enforced by strokes given on gongs in the middle of the field, the foreturners repeated the movement, the entire body of 4,500 men following in unison. The sight of 4,500 bareheaded, white-shirted men, many of them grayheaded, executing complicated movements, which involved tossing of the arms, bowing and bending of the trunk, facing now this way and now that, and all with military precision, in nearly perfect time, was a novel and inspiring one. Would that those who belittle gymnastics as a means of discipline could have seen the marching and facings of that class of 4,500 men.

The essential differences between Volksturnen and Schulturnen are based on the fact that the former is a free art, originating with and maintained by the common people, and the latter is a discipline imposed by authority upon persons in a state of pupilage. The ends of training and education are not lost sight of in Volksturnen, but in Schulturnen they occupy the foreground.

As regards physical training in the schools of Prussia, the case stands thus: Attendance upon instruction in turning is exacted of all unexcused pupils for two hours weekly in all schools for boys, and also, in some cities, in all schools for girls. As a rule, each school has its own turnhalle, and in very many cases its own turnplatz, furnished with appropriate gymnastic machines. Some cities, for instance Frankfort-on-the-Main, provide special playgrounds for the use of school children and instruction in swimming.

While gymnastic drill is not universal in the public schools, it is very general. As might be expected, it is more common and better provided for in the cities than in the country. In 1882 only ten per cent. of the pupils in the higher schools for boys were excused from turning, and they were excused on the certificates of physicians that the exercise would be prejudicial to their health; only eighteen per cent. of this class of schools were obliged to discontinue turning in winter through having no proper turnhalle, and sixty per cent. of them possessed a turnhalle.

In the course of study each class has its special time for gymnastics, just as it has special hours set for arithmetic and reading, and in the majority of cases the instruction is given by one of the ordinary class teachers, and not by a special teacher of turning. The amount of time devoted to turning, singing, and drawing, is usually the same, viz., two hours weekly.

The exercises are carefully adapted to the age, strength and sex of the pupils. The youngest pupils, from six to ten years old, engage in a great variety of simple games, easy, free movements, marching, jumping and climbing exercises, and the fundamental exercises on the easier gymnastic machines. In free, light, and heavy gymnastics the exercises grow more complicated and difficult with the advancing age of the pupil. The expertness of the boys in the upper classes is often quite astonishing. In the Gymnasien and Realgymnasien fencing is taught in the upper classes. Pedestrian tours, skating parties, and excursions into the woods are frequently made under the lead of those who teach turning. The gymnastic course for girls comprises the ordinary free gymnastics; class gymnastics with "hand apparatus," such as dumb-bells, wands, and skipping ropes; marching, dancing, and balancing exercises; various games of ball, easy jumping, swinging, and climbing; and a few of the simpler exercises on the parallel and horizontal bars. Singing, especially during the march and the minuet, is frequently engaged in during the hour given to gymnastic instruction.

The population of Berlin in 1880 was 1,122,330. The total number of pupils in schools of every kind in the city was more than 149,000, of whom not more than 25,000 were in private schools. In schools wholly maintained at the city's expense, there were 104,726 pupils. Of the 62 turnhallen belonging to the city, 41 had turnplätze adjoining or near to them; 2 belonging to higher schools for girls; 11 belonged to higher schools for boys; and 48 belonged to schools of the grade of Volksschulen (termed in Berlin *Gemeindeschulen*); and 1 belonged to the Berlin Orphan Asylum. The city paid nearly $50,000 in 1880–81 for the instruction given its school children in gymnastics, which sum is equal to about one twenty-third of its total expenditure for schools in that year.

The present number of city turnhallen used for educational purposes in Berlin is 98. The largest of them is the *Städtische Turnhalle*, in the Prinzenstrasse. This was established in 1864; it is open every day and evening, and is used at appointed times by several of the Berlin turnvereine, also by the association of Berlin teachers, the royal firemen, the normal classes for teachers of turning, and by eight of the city schools for school turning. In all, more than 13,000 persons exercise here weekly. The annual appropriation for its maintenance, exclusive of salaries, is between $2,500 and $3,000.

As a rule, the school gymnasia in Germany are separate and specially designed buildings, and not refitted rooms. As a class, the German gymnasia are not so luxuriously fitted or so architecturally imposing as many of the newer American college gymnasia, but they are admirably adapted to the purpose of teaching

of free and class gymnastics of every description. As much as possible the apparatus is adjustable and portable. A plain, one-story, brick turnhalle, 60 by 33 feet and 15 to 20 feet high, can be built in Germany at a cost of $5,000, and well furnished with apparatus for $1,000.

In this connection the following facts regarding the Volksschulen of Vienna may be of interest: In 1882–83 Vienna, whose population in 1880 was 704,756, had 72,912 pupils in its 135 Volksschulen. Of this number 44,614 (21,047 of whom were girls) practised turning under the guidance of 658 teachers. The city paid for the teaching of turning and the care of the turnhallen in 1882–83, a sum equal to $34,860, or one-twenty-ninth as much as its total ordinary expenditure for the Volksschulen.

The Prussian schools and the Prussian army are admitted to be the best of their kind. It is a fact of capital importance that in the foremost military State of all the world, not only is military drill excluded from the system of public instruction, but it is also held to be insufficient for purely military purposes, and an elaborate system of gymnastics has been adopted for the training of the soldiery. Even in the cadet schools, boys under fourteen years of age are not allowed to drill with muskets. In Prussia as in other parts of Germany, it has often been proposed to make military drill a part of the instruction for boys. The proposition has been widely and fully discussed, but the weight of the best opinion, educational and military, have been against it. Such experiments as have been made in the direction of giving the schools a military character have not succeeded. On physiological, educational, and military grounds, the authorities prefer gymnastics to military drill, both as a means of securing the symmetrical development of the bodily powers, and as a preliminary training for efficient service in the army. Military drill, say the best of the Germans, is, if genuine, too stiff and severe for school boys; while, if it be not genuine, its moral effects are bad and its tendency is towards the formation of vicious habits of carriage and movement.

Gymnastics and military drill have been made obligatory in practically all public schools for boys throughout the French republic. It is a little more than four years since the French government passed a law requiring the enrollment of all able-bodied boys over twelve years of age in the so-called *bataillons scolaires*. The boys wear a sort of uniform, and are dubbed with muskets, and figure with the rest of the troops on July 13th, the day of the National Festival.

The Germans look with disfavor, but not with fear, upon this movement of the French. It is somewhat too early to pronounce upon the success of the experiment, but there are indications that it is not fulfilling the claims of those who were instrumental in causing it to be made. One of the French military journals characterizes the movement as "a useless phantasmagoria," and General Millot says: "Do not let childhood play at soldiering. The musket should not be taken in hand too soon. It is only in the barracks that the military training of a young man is properly given. Train gymnasts for us; our officers and under-officers will soon make good soldiers of them."

The best exponent of the German system of training in this country is the North American Turnerbund, which comprises more than two hundred societies or *Vereine*, and has a total membership of more than 21,000. In the Turnschulen of the Bund, 12,228 boys and 4,005 girls received instruction in gymnastics in the year 1884–85. It is very remarkable that the ignorance of American educators should be as dense as it is regarding the aims and achievements of the Turnerbund, which has maintained a special Normal School for the training of teachers of turning for many years in the city of Milwaukee. Yet the fact is that the Turnerbund owns more gymnasia than all the colleges of the country put together, and its corps of trained and salaried teachers, numbering nearly one hundred, is the best the country affords.

The German system of school turning embraces free movements, light gymnastics, and heavy gymnastics, all of which may easily be taught to school or college classes, provided you have competent teachers and a well-equipped gymnasium. The German system of physical training is a practical system, based upon sound physiological and pedagogical principles. It is managed by specially-trained teachers, who have perfectly definite ends in view, and its results are admirable. The average American college boy compares, as regards educated bodily ability, with his contemporaries in the upper classes of the gymnasium of Berlin and Frankfort, as do children who can print and one learning to write with the most accomplished pupils of drawing in your city schools.

If the School Committee of Boston shall ever really undertake to provide for the physical training of those committed to its charge, it will do well to profit by the example and experience of such enlightened States as Prussia. To do so it must bring gymnastic training for boys and girls to the front, and send military drill to the rear, or abolish it altogether.

RECENT PROGRESS IN DISEASES OF THE NERVOUS SYSTEM.

BY PHILIP COOMBS KNAPP, M.D.

PROGRESSIVE ATROPHIC MYOPATHY.

Recent investigations have shown that there was a certain amount of truth on either side in the dispute that was once waged over the essential nature of progressive muscular atrophy. The spinal nature of the atrophy of Duchenne-Aran is now well established, but the recent work of Landouzy and Dejerine[1] shows that there is another form of progressive muscular atrophy which is essentially a pure myopathy. They have made a careful study of six different cases, occurring in two different families, and give a report of the autopsy in one case. In one family there had been nine cases in five generations, in the other two cases in three generations; the affection thus manifesting a distinctly hereditary type.

The disease usually begins in early childhood, making its first appearance about the age of three or four, but it may come on later in life. If it begins in childhood, the muscles of the face are first involved, the face seems to have a mask over it, the forehead is smooth, the wrinkles are abolished, the eyes seem wider open, and are not perfectly closed, and the lips protrude. The child has a dull, expressionless look, almost like that of an imbecile, although the intellec-

[1] L. Landouzy et J. Dejerine. De la myopathie atrophique progressive, myopathie sans neuropathie, débutant d'ordinaire dans l'enfance par la face. Revue de Médecine, Feb., April, 1885.

tual faculties are unimpaired. Any attempts at the expression of emotion intensify the condition, the laugh being especially characteristic. The affection may remain confined to the face for years, but later on the process involves other portions of the body. The shoulder and upper arm are next attacked, the process involving the trapezius, the rhomboids, the deltoid, the biceps, the brachialis anticus, the triceps, the supinator longus, the pectorals, and the flexor carpi radialis. The thenar group are less frequently attacked, the abductor brevis being first affected. When the atrophy is extensive, the hand assumes the simian type, the *main en griffe* being rare.

In adults, the process may begin in the shoulder, the face remaining intact. Later on the lower limbs are affected, first the thigh, and later the leg, the foot assuming a position of equinus. The abdominal muscles and the sacro-spinalis also atrophy, and there may be lordosis. The subscapular, infra and supra spinales, and the flexors and extensors in the fore-arm remain free for a long time; and the muscles of mastication, of the eye, tongue, palate, and pharynx are never involved. There is never any hypertrophy or pseudo-hypertrophy. A slight retraction of certain muscles, like the biceps, preventing complete passive extension of the fore-arm, is often seen, and is very characteristic. There are never any fibrillary contractions in the muscles, such as are often seen in myelopathies. Electrical excitability disappears, along with the voluntary contractility, only when the muscle is wholly atrophied. The changes in the electrical reaction are never qualitative, but only quantitative — that is, there is never reaction of degeneration. The patellar reflex stands in direct ratio to the amount of unatrophied muscle. General and special sensibility remains intact; there is never any trophic disturbance; the sphincters and the muscles of vegetative life remain intact throughout.

The affection is essentially chronic, but continuous in its march. The victims of it may live for thirty years, but are apt to die of tuberculosis. In the case which came to autopsy, and which died of phthisis, there was absolutely no change in the central nervous system or in the peripheral nerves, even in their finest muscular branches. The only lesion was a simple, progressive atrophy of the primitive muscular fibre, with some sclerosis and a little adipose deposit. Occasionally a few fibres were hypertrophied, but this was not extensive enough to be evident clinically. When an individual muscle was attacked, it was attacked in all its parts, but certain muscles remained unaffected. The process is regarded as a primitive parenchymatous myositis, leading to atrophy, and combined with a very slight interstitial myositis. It is regarded as an atrophic cirrhosis, whereas pseudo-hypertrophic muscular paralysis is a hypertrophic cirrhosis. The fact that the finest nerve-fibres remain intact effectually demolishes Friedreich's theory that the nervous lesions in progressive muscular atrophy, type Duchenne-Aran, are deuteropathic, secondary to the atrophic changes in the muscle.

The diagnosis is not difficult if all the above points are considered. The chief disease to be excluded, of course, is the Duchenne-Aran type of atrophy. In this form the face is never involved; it is apt to begin in the hand; it affects adults; the muscles show fibrillary contractions; there are no muscular retractions, and definite groups of muscles are involved; this form, too, has never yet been seen in infancy. In amyotrophic lateral sclerosis there is more paralysis than atrophy, and when the face is involved, bulbar symptoms appear. Anterior poliomyelitis is not as slowly progressive, never involves the face, and shows reaction of degeneration. Erb's juvenile form of muscular atrophy is attended with some hypertrophy, and never involves the face. Pseudo-hypertrophic muscular paralysis begins in the lower limbs, and is attended with marked hypertrophy.

NEURITIS.

Pitres and Vaillard[2] have recently been making careful studies of the changes in the peripheral nerves in various infectious diseases. Among the nervous sequelæ occasionally seen after typhoid fever, are paralyses of one or more groups of muscles, which are in all probability due to a lesion of the peripheral nerves. These paralyses may be attended with pain, anæsthesia, loss of electrical excitability, and atrophy. In one case the peripheral nature of the trouble, which had seemed probable from the symptoms and course of the paralysis, was proven by an autopsy. Histological examination of the nerves in patients who have died of typhoid fever has shown that the peripheral nervous system is often the seat of the more or less grave and diffuse alterations of parenchymatous neuritis. If these changes are slight, the trouble may remain latent, or else the changes may give rise to only a few vague signs; but with more pronounced changes the sensory, motor, and trophic disturbances characteristic of neuritis appear, and, after some cases of typhoid, may be well marked.

In the course of tuberculosis, too, parenchymatous alterations — a degenerative neuritis — are not infrequently found in the peripheral nerves, originating in them and independent of any lesion of the brain or cord. This degeneration may attack motor, sensory or mixed nerves, and even the cranial nerves, or nerves like the phrenic and pneumogastric. The symptomatology of these affections is complex, but the authors make three divisions: 1, *névrites latentes*, where the lesions are slight, and the nervous symptoms are latent or escape observation from the severity of the tuberculosis; 2, *névrites amyotrophiques*, where the most prominent symptom is atrophy; 3, *névrites douloureuses ou anesthetiques*, where sensory troubles, pain, anæsthesia, hyperæsthesia, and paræsthesia predominate. The frequency and the variations in the distribution and symptomatology help to explain the existence and the polymorphism of many of the nervous troubles in tuberculosis.

In one case of neuritis, involving several nerves, coming on in a tubercular patient after cutaneous diphtheria, a curious change was noted. The degeneration, which did not differ essentially from the parenchymatous degeneration ordinarily seen, attacked only certain segments of the nerve-fibre, *névrite segmentaire*, so that a single fibre would show several centimetres of degeneration between two portions of healthy fibre. Sometimes two or three such segments could be seen in a single fibre, and the degeneration was not peri-axial, but involved the axis cylinder, and completely

[2] A. Pitres et L. Vaillard. Contribution à l'étude des névrites périphériques survenant dans le cours ou la convalescence de la fièvre typhoide. Revue de Médicine, December, 1885.
— Des névrites périphériques chez les tuberculeux. Revue de Médicine, March, 1886.
— Contribution à l'étude de la névrite segmentaire. Archive de Neurologie, May, 1886.

destroyed it. Other fibres showed a continuous degeneration throughout their course. The authors were unable to explain this peculiar change, or to reconcile it with the law of Wallerian degeneration.

Gombault [5] has described a different form of segmentary neuritis, where the axis-cylinder can be traced through the affected part, and is directly continuous with the healthy axis-cylinder. It is not normal, however, but is swollen and flattened. He states elsewhere [4] that this peri-axial segmentary neuritis either recovers or progresses, involves the axis-cylinder, and thus leads to Wallerian degeneration. Hence, he calls it a pre-Wallerian stage of degeneration.

Buzzard [5] reports cases of local paralysis, associated with pain, tenderness over the nerve-trunks, anæsthesia, paræsthesia, and changes in the electrical reactions, in patients who have previously shown decided symptoms of gout, and he considers the symptoms due to a neuritis brought on by the irritation of the nerve-fibres by the urate of sodium in the blood. He also reports cases following syphilis, tuberculosis, typhoid, etc. Oppenheim,[6] reporting a case of multiple neuritis of doubtful origin where there were decided mental symptoms, claims that the most important causes of the disease are cold and alcoholic excess. Francotte [7] reports four cases of multiple neuritis, three in alcoholic or tubercular subjects and one in a previously healthy individual. Eulau [8] reports a similar case in a man previously healthy, where it seemed as if the disease might be of infectious origin, a hypothesis which Francotte advanced in his case. In this connection it may be of interest to note that it is reported that Wallace Taylor, of Ozaka, has found a spirillum in the blood in beriberi, which can sometimes, after cultivation, reproduce the disease. We have not seen the original account of these pure cultures, however.

Francotte and Eulau also mention certain factors of importance in the diagnosis of multiple neuritis. The latter, from the case that he reports, corroborates Strümpell's statement that severe initial motor symptoms, associated with sensory disturbances, point to multiple neuritis. Severe pains and sensitiveness to pressure over the nerve-tissues, are corroborative. Trophic symptoms, like bed-sores; vaso-motor symptoms, like œdema or a rapid pulse; and secretory disturbances are not sufficient to exclude neuritis, as they were all present in Eulau's case. Francotte, in the differential diagnosis between multiple neuritis and anterior poliomyelitis, states that in the former disease the termination is much more favorable; in neuritis the loss of volitional power in the affected muscles and the loss of electrical excitability go hand in hand, while in poliomyelitis the volitional power may be quite good even with distinct reaction of degeneration; in poliomyelitis, too, there are no sensory symptoms, and definite groups of muscles functionally related are attacked by paralysis.

[Francotte's statements do not agree with the experience of others. The prognosis for an ultimate *restitutio ad integrum* of the affected muscles may be better in neuritis than in poliomyelitis, but the prognosis as regards life is a different matter. No case of death is known to have been caused by anterior poliomyelitis, but multiple neuritis, is always a grave disease, and not infrequently proves fatal. The reporter has repeatedly seen some volitional power in the muscles where faradic excitability was lost and reaction of degeneration was present, and this has been confirmed by other observers. Some sensory disturbances may be present in poliomyelitis in its initial stages. The question of differential diagnosis may be quite easy or it may be extremely difficult, and the two affections have been repeatedly confused. Marked pain, paræsthesia, distinct tenderness over the nerve-trunks, and paralysis of muscles supplied by the same nerve and not necessarily functionally related are the important diagnostic points in multiple neuritis as distinct from anterior poliomyelitis.]

[3] A. Gombault. Note relative à l'éxistence de la névrite segmentaire périaxile, à propos d'un cas de paralysie diphthéritique. Le Progrès Médical, 1886, p. 472.
[4] A. Gombault. Sur les lesions de la névrite alcoolique. Academie des Sciences, Comptes rendus, CII, p. 439, 1886.
[5] T. Buzzard. On some Forms of Paralysis from Peripheral Neuritis. London, 1886.
[6] H. Oppenheim. Beiträge zür Kenntniss der multiplen degenerativen Neuritis. Centralblatt für Nervenheilkunde. No. 1, 1886.
[7] X. Francotte. Contribution al 'etude de la névrite multiple. Revue de Médicine. May, 1886.
[8] S. Eulau. Ein Fall von multipler Neuritis, Berlin. kl. Wochenschrift. No. 6, 1886.

ALCOHOLIC PARALYSIS.

Recent observers agree that alcoholic paralysis and alcoholic ataxia are both of peripheral origin— that the affection is one form of multiple neuritis—a term which now must be used to mean simply a pathological change resulting from many distinct affections, rather than a special morbid entity. Dreschfeld [9] and Strümpell [10] divide this alcoholic neuritis into two varieties, alcoholic paralysis and alcoholic ataxia, which many other observers have followed. Krücke [11] giving the last variety the name of "pseudo-tabes of alcoholics." Dreschfeld considers the ataxic form a milder type. The patients complain of severe pain, chiefly in the lower limbs; there is diminished sensation with some hyperæsthesia, marked tenderness over the nerve-trunks, an ataxic gait and ataxia in the hands, inability to stand with the eyes shut, and loss of patellar reflex. In Dreschfeld's cases there was little paralysis or atrophy, and merely a quantitative diminution in the electrical excitability. The paralytic variety shows an increase of the sensory symptoms, with paralysis, atrophy and loss of electrical excitability, often associated with reaction of degeneration. With this Dreschfeld calls attention to the peculiar and characteristic delirium which attends the disease. The patient answers questions rationally, but his memory is defective and he has delusions. He states that he gets up and goes to different places, describes them, and tells of the people he meets, giving full and minute details of his own and others' words and actions. In one case of the ataxic form which came to autopsy the cord was healthy but the sciatic nerve was found degenerated.

Buzzard [12] reports a number of cases of alcoholic neuritis, in some of which there were muscular contractions so severe as to require tenotomy. He thinks that in this form of neuritis the pain and hyperæsthesia are unusually severe, and that there is a much greater tendency to muscular atrophy. He has noticed mental symptoms similar to those described by Dreschfeld, and also nervous symptoms suggestive of incipient delirium tremens. As a rule, the patellar reflex is absent, but in a few cases it has been exaggerated, perhaps from an interference with the inhibitory influ-

[9] J. Dreschfeld. Further Observations on Alcoholic Paralysis. Brain, January, 1886.
[10] A. Strümpell. Krankheiten des Nervensystems, Leipsic, 1886.
[11] Cited by Dreschfeld. Deutsche Med. Zeitung. 8 Sept., 1884.
[12] Op. cit.

ence of the cortex cerebri from alcohol. On recovery the patellar reflex returns. He lays stress on one symptom which he thinks as characteristic of alcoholic paralysis as wrist-drop is of that from lead — namely, dropped feet, and he claims that this symptom always justifies an inquiry into the patient's habits.

Schulz [13] reports a case in a hard drinker, beginning with mental confusion and followed by atrophic paralysis of all four extremities. The patient also had slight paræsthesia, but no loss of sensibility or muscular sense; pain, tenderness over the nerve-trunks, some febrile articular disturbance, loss of patellar reflex but no ataxia, retained cutaneous reflexes, involuntary passage of urine and fæces (due as he thinks to the mental impairment), diminished electrical excitability of nerves and muscles to both currents without qualitative changes, and temporary paralysis of the abducens. He believes the process to be a pure neuritis, although the brain may also be affected. Some authors have claimed that there was a formation of vacuoles in the ganglion cells of the anterior cornua, but this he thinks is produced artificially. Charcot, he says, is of the same opinion.

Hun [14] reports two cases, one of which came to autopsy, in one of which there was marked ataxia, and in the other decided atrophy. In the first case there was little atrophy, slight sensory disturbance, and little hyperæsthesia; in the second all these symptoms were pronounced, and the conduction of pain was delayed. In both there was pain, muscular weakness, reaction of degeneration or an approach to it, pain on pressure, ataxia, and a loss of patellar reflex. Both cases exhibited mental disturbance. A lesion in the brain alone could not account for all these symptoms, and a lesion in the cord would have to be very widely distributed, involving the anterior cornua and the posterior columns. This he thinks improbable, and thus, by exclusion he places the lesion in the nerves. The autopsy showed the cord normal, but there was degeneration and atrophy of the nerve-cells in the cerebral cortex, congestion of the pia, and a serous effusion into the sub-arachnoid space. The peripheral nerves were not examined. Hun concludes that drunkards are especially liable to multiple neuritis, and that alcoholic paralysis is simply multiple neuritis complicated by other symptoms of alcoholic poisoning, such as mental derangement, tremor, and ataxia,— symptoms which seem to be due to changes in the cerebral cortex.

In regard to the pathology of alcoholic neuritis, Gombault states [15] that the anatomical characteristics are very like those of Wallerian degeneration, but that, beside the degenerated fibres, others are found where the myeline sheath appears finely emulsified and composed of fatty granules. He also finds the peri-axial segmentary neuritis mentioned above, which he thinks is especially common in the alcoholic form.

Œttinger, in a recent monograph,[16] gives an extensive account of the whole subject. The paralysis is never abrupt in its onset, but is preceded by mental disturbances, pains, and paræsthesia. There may also be transient œdema of the extremities. These symptoms are followed by more or less motor disturbance, weakness, paresis, and finally, perhaps paralysis. The paralysis is never complete, and voluntary power may remain to some extent after the faradic excitability of the muscles has vanished. He claims that the muscles of the face and the sympathetic nerves are never involved, and that contractures are never seen — a statement which is at variance with the reports of other observers and with our own experience. Great stress is laid on the vaso-motor and trophic symptoms, redness, sweating, œdema, and "glossy skin." The ataxia is merely a complement of the paralysis, and the atrophy is secondary. He finds increase of the nuclei in the nerves, tumefaction of the protoplasm, and a breaking of the myeline into lumps. Later on, the axis cylinder breaks up, and the nerve is finally reduced to its sheath. Pulmonary tuberculosis was a frequent complication.

The diagnosis is often very difficult. Strümpell lays stress on the fact that the Argyll-Robertson pupil, the girdle sensation, and vesical disturbances seem to be absent, as a rule, in the ataxic form — pseudo-tabes — while they may be present in genuine tabes. Atrophic paralysis is evidence against true tabes. Buzzard also calls attention to the electrical changes in neuritis, and the fact that the patellar reflex may return. The exclusion of anterior poliomyelitis may be still more difficult. Schulz bases his diagnosis on the multiple distribution of the morbid process, the marked atrophic paralysis and diminution of electrical excitability, the slight sensory disturbances, the loss of patellar reflex, the tenderness and the pains, and the fact that the electrical excitability and the patellar reflex returned, and the patient recovered after leaving off the alcohol. Buzzard states that three points should be borne in mind: in anterior poliomyelitis, the first stage of increasing intensity of symptoms is much shorter; muscles functionally related are simultaneously affected, while in neuritis the muscles attacked are those in the distribution of the nerve-trunks; in neuritis, there is usually pain and tenderness on pressure over the nerves — symptoms which are generally absent in poliomyelitis.

Schulz gives the report of eleven cases, of which five died, four recovered, and two improved. In those that died the cord was normal, and the nerves degenerated in every case. Œttinger and Buzzard also claim that the prognosis is always grave, especially if the patient returns to his old habits.

This subject cannot be dismissed without a reference to the connection between alcoholic paralysis and amblyopia *ex abusu* described by Standish, and already published [17] in this JOURNAL.

(To be continued.)

[13] R. Schulz. Beitrag zur Lehre der multiplen Neuritis bei Potatoren. Neurologisches Centralblatt, No. 19-21, 1885.
[14] Henry Hun. Alcoholic Paralysis. American Journal of the Medical Sciences, April, 1885.
[15] Loc. cit. Sur les lesions de la névrite alcoolique.
[16] Œttinger. Sur les paralyses alcooliques, Paris, 1886. Abstract in American Journal of the Medical Sciences, April, 1886.

[17] M. Standish. A Case of Alcoholic Paralysis preceded and accompanied by Amblyopia ex abusu, with remarks thereon. Boston Medical and Surgical Journal, Vol. CXIV, No. 16, April 22, 1886.

— A Western contemporary says that a young man went to the department of diseases of women in the Chicago Polyclinic and said that he had a disease of a woman and wanted to be treated.

— The *British Medical Journal* tells of a scybalum so large that in order to extract it, it was necessary to give the patient chloroform and apply Simpson's short forceps. The patient, a woman, suffered from delusions which appeared to be due directly to the intestinal accumulations.

Clinical Memorandum.

URINARY INCONTINENCE OF CHILDREN TREATED BY ANODYNES PER RECTUM.

BY EDWARD T. WILLIAMS, M.D., OF ROXBURY.

It is safe to say that the modes of treatment usually recommended for this distressing infirmity are frequently ineffective and disappointing. A failure of my own some years ago with a child nearly related and especially dear to me, led me to cast about for some improved method. For the past year or two I have been trying, with complete success thus far, the use of anodynes by the rectum, in the form of injections and suppositories of morphine, belladonna, or atropine. I have now cured about six cases by this means, besides temporarily relieving many more who have passed out of sight during treatment, so that I cannot positively state the final results. I have no doubt, though, that a portion of these have been cured. Some of them were patients of the Sea Shore Home, where the length of stay averages less than a fortnight — too short a time to effect a permanent cure in any case. One of my cases, which I will describe presently in detail, had been a constant sufferer for ten years. The treatment occupied a year, off and on. She is now entirely well.

I find that morphine alone relieves for the time being, but does not cure. Belladonna and atropine are curative, when continued long enough, though I find them to be better borne in combination with a little morphine, which counteracts some of their bad effects, and enables them to be given more continuously. Furthermore, the requisite dose of belladonna is smaller when combined with morphine. When these medicines produce headache or undue nervous excitability, I use the bromides as a corrective, or suspend their administration for a time. I have found no case where they could not be borne when properly given.

As to the mode of administration, a fifteen-grain suppository of cocoa butter is most easily handled, and that which I prefer. They should contain a proper amount of extract of belladonna and morphine. For a child five years old, say, one-eighth of a grain of belladonna extract, and one-sixteenth grain of morphine; but the doses must be carefully adapted to the particular case in hand, beginning with a small dose, with a smaller relative proportion of belladonna, and increasing the latter and diminishing the morphine as toleration becomes established.

If an enema or clyster be preferred, it should consist of about a drachm of lukewarm water, with a few drops of atropia and morphine solution added, and administered with the small hard-rubber syringe (No. 2) especially designed for the purpose. The old-fashioned clyster of starch-water and laudanum is absurdly out of date. I have used nothing for years but morphine and warm water, mixed as for a subcutaneous injection, only that the water should be tepid, and not exceeding a drachm in amount. I hardly dare claim to be the originator of this self-suggestive plan, though I certainly never heard of its being done by others before I adopted it out of my own fancy years ago, since which time I have freely mentioned it in conversation and before various societies. It is certainly the simplest form of anodyne clyster.

At the Sea Shore Home, where we do things by wholesale, I have two solutions of morphine and atropia ready made. The first consists of one-sixth grain of morphine and twenty minims of water. The dose by drops therefrom is the same as that of laudanum, which makes it especially convenient for the nurses. The other is one-sixtieth grain of atropine to twenty minims of water. Reckoning one-sixtieth of a grain as an average commencing dose for an adult, the dose for a child may be graduated by drops precisely as with laudanum. For a child five years old, then, as an enema, you might give for a commencing dose from three to five drops of each solution, mixed with a teaspoonful of warm water. These doses may be differently combined or altered in any way to suit a particular case.

I mention these points because it is convenient to have both in private and hospital practice certain methods of routine, not only to save thought and labor, but to lessen the chances of mistake.

I will conclude by recounting a single case as an illustration of this mode of treatment. A bright and charmingly pretty girl of fourteen came under my care for this disease July 9th, 1883. Had been subject to it for years, in fact nearly all her life. Was of a peculiarly sensitive nervous temperament, and subject to convulsions in infancy and early childhood, for which I had myself attended her. Was just beginning to menstruate. The urinary trouble had become a great source of mortification to her, and her shyness about it was so great that she could not be brought to talk with me on the subject, so that all communication had to pass through the mother, a thing I should hardly have put up with if it had not been one of my particular families. This being my first case (of rectal treatment) I began with morphine alone, one-sixth of a grain nightly, in suppository. Failing to produce full relief I doubled the strength, making one-third of a grain, when she went nearly a month without once wetting the bed. On stopping the suppository the trouble quickly returned. Recommenced the one-third grain suppository on September 14th, with full relief of the incontinence as before, but the patient, who was attending school all the time, began to get "fidgety" and nervous from the effects of the morphine, so that I was compelled to give small doses of bromide of potassium daily. This relieved the nervous symptoms entirely. I then began to taper-off on the morphine, giving a suppository every second or third night instead of every night, or occasionally halving the suppository. On this treatment she began to wet more frequently, and I became satisfied that morphine alone would not cure her. October 29th I prescribed a suppository containing one-sixth grain of morphine and one-fourth grain extract of belladonna. On December 10th I made it one-eighth grain morphine and one-half grain extract of belladonna. Both these answered perfectly, and in six weeks she was practically cured. In the succeeding six months she did not wet more than six times, but each time was carefully followed by the use of the belladonna suppository for one week to prevent a relapse. For two years now, since the summer of 1884, she has been perfectly well and improved greatly in general health.

I might report other cases far more rapidly cured. I select the above on account of its long standing, and, since I was obliged to proceed somewhat tentatively, as showing very well the comparative action of morphine and belladonna. The latter I have never given

without some morphine, believing they act better in combination, as they do when given by the mouth.

From my present experience I regard the rectal treatment as superior to all others in this disease.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

JUNE 8, 1886. The meeting was opened at eight o'clock, by the Chairman, DR. F. I. KNIGHT. The records of the meeting at which the subject of

MILITARY DRILL AND PHYSICAL CULTURE

was first discussed, were read and approved.

PROF. D. A. SARGENT, of Harvard University, was introduced, and opened the further discussion of the same subject by a paper [1] in which the defects of the present mode of physical instruction were pointed out, detailing the reasons why military drill as a means of exercise is inadequate in character, and injurious in effect. The claims established by Prof. Sargent against the efficacy of the drill were illustrated by means of a student of Harvard University, who having the clothing removed from the upper part of his body, performed the evolutions of the manual of arms before the audience, with the chest and arms uncovered, so that the muscular movements attending these exercises were plainly visible to those in the hall.

Prof. Sargent then illustrated other forms of physical exercise by means of the nude subject, and showed the relative efficiency of Indian clubs, wands and pulley-weights. Prof. Roberts, the Superintendent of the Boston Young Men's Christian Association Gymnasium, then gave a nude exhibition drill in dumbbells, which elicited generous applause. This drill is one of the most important features of the class-exercise at that Institution, and is considered very important in aiding the symmetrical development of the body. One of the most objectionable features of the military drill is found in the fact that the movements are essentially one-sided, and their effect upon the body is to make it unsymmetrical, often inducing a marked drooping of the shoulder of the right side, and sometimes doubtless causing curvature of the spine. The curvature once produced, it is quite easy to perpetuate it. Ladies often acquire lateral curvature from the habit of carrying the train always in one hand, and thus producing a tendency to curvature, which other forms of exercise, such as horseback riding, etc., may perpetuate.

The setting-up drill was then demonstrated, and the good features of this exercise pointed out. The fact was strongly brought out that physical training needs the careful supervision of an educated instructor, to direct the exercises to the needs of the particular individual, and thus prevent the harm which may, and no doubt does arise from the unintelligent and injudicious use of what in well-directed channels is a most important adjunct to physical health.

PROF. HITCHCOCK, of Amherst College, was introduced, and said that he had but few remarks to add to what had been said.

The subject of physical training is a broad one, and concerns all the pupils in all our schools. It is not the introduction of all forms of training that is needed, but of chosen and carefully adapted forms of exercise for the conditions arising in the individuals before us. A library has been said to be not a collection of books, but a selection of books; and so the features of physical training may be very different in relation to the special requirements of each person.

The average college boy is a rather hard animal to drive, and is apt to kick over the traces. He must be catered to in the laying out of irksome duties, so as to get as much pleasure with the labor as possible. Military drill is objectionable on account of the character of the exercise, and on account of the discipline. If we desire to make a mere automaton of a boy, to deprive him of his thinking faculties, to make him dependent on orders and directions of others, then military drill is a good thing. Is this system the right one? I think not. Every boy is examined in all the branches of his curriculum, and his progress is in accordance to carefully prescribed directions. The same should be true in relation to physical training as is true in relation to mental or moral training. Boys should not be turned into a gymnasium as calves are turned into a pasture, but should be carefully overlooked and guided, in order that the very means for their physical benefit may not become an agent of harm, or positive danger.

GEN. HOBART MOORE, Instructor in Military Drill in the public schools of Boston, said that he had been much interested in the exhibition of the drill, and not less amused. He would not be surprised to find curvature of the spine, or any other deformity resulting from the exercise of the drill as this was done before the audience. In actual practice, however, the evils represented and charged to the drill, are not observed. The statement has been made that the drill is confined to one side of the body. This is not so. The drill is made to embrace movements in exercise of both sides of the body, and the result of its employment is not asymmetrical development of the body of the boy. In addition to this, the actual practice of the drill is preceded by exercise in the "setting-up drill;" so that every possible source of defective or restricted exercise is removed.

Gen. Moore stated that he had pupils in Harvard and in other schools, and was constantly receiving most encouraging reports from them as to the influence of the drill-movements, and their relation to the bodily health and well-being of the pupils. In all the schools where the drill has been introduced, the boys are anxious to join, and often it is necessary to refuse permission to ambitious youths on account either of the small size of the applicants, or on account of their years. The parents of boys often come to the school to beg permission for their boys to join in the drill. An experience of twenty-five years in the practical teaching of the drill has convinced him that it is not only not harmful, but is of positive advantage both in relation to the physical development of the boy's constitution, and also in relation to the training of the mental and moral nature.

If this were not so, the drill would long ago have been discarded from the curriculum of our public schools. The striking rarity of accidents in the exercises of the

[1] See page 245 of the Journal.

drill is another feature to recommend it. In relation to the boys who are excused from drill, the fact is that more boys are exempted from drill on account of the effects produced by the abuse of gymnastics, than from all other causes put together. The boys themselves always want to drill. Objection to the drill does not come from those interested in it, the boys themselves, but from those who have no actual information on the subject, who are striving to upset an institution which the experience of years has found to be productive of great good, and to be free from serious harm.

Prof. Sargent stated that some of the criticisms of Gen. Moore seemed to him unnecessarily harsh, and quite unjust, as far as they related to the illustration of military drill as illustrated by the young man who had performed it before the audience. The gentleman is the son of an officer in the United States Army and has been familiar with military tactics for many years. He has a brother at West Point. He has been himself for some years under practice in the exercise of the drill and is one of Gen. Moore's own pupils.

Prof. E. M. Hartwell, of Johns Hopkins University, was introduced by the Chairman. His remarks are given in full on page 249 of the Journal.

Dr. J. P. Reynolds said that he was at one time in Frankfort, and had observed the enthusiasm with which physical culture is there carried out. It is strange that in a city one-fifth the size of Boston, so much can be done and is done, and in our own city we have nothing. The experience of seventy years in Prussia, should teach us something. We have retreated a long way toward barbarism, by our apathy in regard to the physical welfare of our children, and by neglecting them, we lay the foundation for lives of feebleness and incapacity. Nobody who has observed the people of Germany can have failed to notice how much stronger and more robust the population as a rule is in that country, than is the fact here. We are as a nation becoming effeminate and weak. The lessons of other countries are without influence upon our dulled faculties, and we have to look forward to an increased deterioration in the stock of health and vitality as the logical result of our stupidity. In Germany, even the son of the Emperor was not spared the entire *régime* of the course for physical training laid down for the preparation of the recruits for the regular army. Every man must perform this duty to his physical system, before he is considered capable of attempting the discharge of his duties toward his country. At the present time, there is such a degree of apathy among our people, that we might as well have hoped to legislate slavery out of existence, as to awaken in the minds of our citizens a proper regard for the benefits or the necessity of physical culture. Some years ago, when Dr. Reynolds was a member of the School Board, this same Dr. Hartwell was a teacher in the Latin School. In the intervals between sessions Dr. Hartwell engaged some of the pupils in gymnastic exercises, to their great delight and personal benefit. Some of our wise committee objected to this, and stated that a teacher was not employed to *play* with the pupils, and the unfortunate result was that Dr. Hartwell was legislated *out*, and there has been no proper physical exercise in the schools of Boston from that day to this.

It is not easy to speak calmly of such an abuse as this is toward all the pupils of our schools. It is hard to repress the indignation which one feels at the exhibition of such a degree of narrowness and ignorance on such an important subject, one which has to do with the health and happiness of every pupil in the public schools, of every father and mother, every family among us, and indirectly with the well-being of those on whom the burdens and responsibilities of our public and private welfare must soon rest.

Dr. D. F. Lincoln said that one important point had not been touched upon in the course of the present argument, and that is the fact that the girls need careful physical training as much as the boys, and that they have even less opportunity for exercise than have their more fortunate brothers. The people are not doing their whole duty by their children until they have given them the advantages of physical culture commensurate with their mental development.

Dr. C. F. Withington, in closing the debate, spoke of the lateness of the hour, and said that he would not prolong the discussion, although there was much to be said. He observed that the exercises of this meeting had demonstrated that the simplest of apparatus could be made serviceable for a very comprehensive system of physical culture, and vastly improve upon the form of exercises now in vogue. There could be no question that the drill leaves much to be desired as a means of physical development, which could be supplied by the simpler and less expensive form of exercises connected with the courses of physical culture as shown at this meeting.

When our school authorities have attended to the first requirements for physical culture of the whole body of pupils, male and female, then if there is any time or any money to spare let them think of supplementing the function of the State in the maintenance of a militia.

Dr. Reynolds said that he hoped that this meeting would not adjourn without some expression of its feeling of indebtedness to those gentlemen, not members of the Section, who had contributed so greatly to the intelligent discussion of this important subject, and moved a vote of thanks of the Section be extended to them for their presence and co-operation on this occasion.

The motion of Dr. Reynolds was put by the Chairman, and unanimously carried.

Adjourned at 10.40 o'clock.

THE AMERICAN DERMATOLOGICAL ASSOCIATION.[1]

CLINICAL NOTES ON SCABIES.[2]

by Dr. F. B. Greenough, of Boston.

DISCUSSION.

Dr. A. R. Robinson, of New York. In some cases where there was difficulty in the diagnosis, I have reached a positive conclusion by opening a vesicle and examining its contents under the microscope, and finding the young acari or the fæces.

Dr. L. N. Denslow, of St. Paul. I have had a number of cases in which no burrows could be found, but under treatment suitable for scabies, they have recovered. The treatment used has been thorough scrubbing from head to foot, followed by the application of sulphur ointment. In regard to the complaint

[1] Continued from page 238.
[2] Reserved for publication in this Journal.

known as prairie itch, I should from my experience say that it was nothing more than scabies.

DR. E. B. BRONSON, of New York. I agree with the author of the paper as to the frequent absence of the cuniculi. In many cases I have depended largely upon the elongated character of the efflorescence in making the diagnosis. For three months, I treated all cases of scabies with napthol, using a fifty per cent. preparation rubbing the body thoroughly with this once. This has produced a satisfactory result.

DR. S. SHERWELL, of Brooklyn. I have recently seen an increased number of cases of scabies and a large proportion of the cases has been among Scandinavians. I thought that this might be due to want of thoroughness in the cleaning of the ships in which the emigrants are brought to this country. As a prophylactic, I always direct the patient to sprinkle on the sheet of the bed a teaspoonful of the dry sulphur. This acts as a disinfectant and is unpleasant to the acarus.

CLINICAL OBSERVATIONS REGARDING THE VALUE OF RESORCIN, ICTHYOL AND LANOLIN IN CUTANEOUS DISEASES,

by DR. H. W. STELWAGON, of Philadelphia.

Resorcin in eczema, is rarely of benefit, but possesses some power over the itching. For this purpose a six per cent. ointment is useful. In greater strength it is irritating. In tinea sycosis it has proven of some value in ten to twenty per cent. strength. In tinea tonsurans, it is inferior to the remedies usually employed. In one case of leg ulcer, healing took place under its use. In a second case, no effect was produced. In seborrhœa and alopecia dependent upon this disease, a lotion consisting of a drachm of resorcin, one or two drachms of castor-oil, five minims of peruvian balsam, and four ounces of alcohol was of value. In tinea versicolor, it was found less useful than a solution of hypophosphite of sodium. In psoriasis and in one case of lupus erythematosus, the result was negative. In one case of superficial epithelioma, a fifty per cent. ointment produced a good result. In a second case, a fair result was obtained, and in a third the result was negative. In a case of favus, a twenty-five per cent. ointment used two months produced no decided effect.

Icthyol. In a small proportion of cases of rosacea and acne vulgaris a ten to twenty per cent. preparation was found beneficial. In eczema it was valueless and usually irritating. In furunculus it acted with good results in three cases, when applied as a twenty per cent. plaster. In the fourth case it had no effect. It was of service in psoriasis and also in a case of lupus erythematosus. In favus, it was used without effect.

Lanolin. In some cases as an ointment base this is superior to the ordinary fats in use. Where a simple protective action is desired, it is inferior to vaseline, cold-cream or lard. In chronic cases, where there is infiltration and a degree of penetration is the object, lanolin is especially valuable. The writer stated that according to Liebreich, a *lanolinum purissimum* was now manufactured, in which the cholestrin ethers were absent. The main disadvantage of lanolin as now manufactured from sheep's wool, is its strong sheepy odor. In a few acute and sub-acute cases of eczema lanolin for some reason proved irritating. As a rule, however, it is bland and unirritating.

THURSDAY.— SECOND DAY.— MORNING SESSION.

The first paper was entitled:

TROPHONEUROSIS OF THE SKIN CAUSED BY INJURY OF THE MEDIAN NERVE,

by DR. G. H. TILDEN, of Boston.

E. F., fifty-five years of age, was wounded in the wrist by a circular saw in November, four months before coming under observation. The wound was parallel with the limb. It was sewed up and healed in about ten days. Three or four days after the infliction of the injury, there was loss of the tactile sense and a feeling of numbness in the last two phalanges of the fore and middle fingers. This has continued and steadily increased. There was at first a slight feeling of numbness in the thumb, but this gradually diminished until it disappeared. Three weeks after the accident a bulla appeared upon the terminal phalanx of the middle finger. Similar lesions have developed from time to time upon the last two phalanges of the fore and middle fingers. The bullæ appeared every two or three weeks and were unaccompanied by any subjective sensation. These leave superficial excoriations which heal in the course of ten days. The skin over the affected phalanges is of a white color and of glossy texture. The growth of the nails is unaffected. There was entire loss of sensation in the skin covering the affected phalanges. The right hand is capable of exerting only one-half the power of the left. The first and second interossei muscles exhibited the reactions of degenerations.

Six weeks treatment with the faradic current caused decided improvement in all the symptoms. During this period only one bulla formed. He then stopped treatment and returned to work. Three weeks later, all the former symptoms suddenly returned. It was proposed to the patient that an incision be made over the seat of injury with the view of determining the exact condition and if possible remedying it. The patient has not since been seen.

Whether the trophic nerves exist as individual and special nerve-fibres or whether the motor and sensory nerve-fibres are the ones by which the nutrition of the tissues is governed, is unknown. The latter view was considered by the author as the most rational. Injury or disease of the motor or sensory nerves as well as disease of the ganglia and central nervous system, may disturb not only motor power and sensation, but also the nutrition of the tissues. That it always does so is by no means the case, but why trophic changes should take place in one instance and not in another is not clear. A number of cases have been reported showing that such changes are more apt to follow partial injury of a nerve than complete section. The changes commonly seen in these cases are the so-called glossy skin and vesicular and bullous eruptions followed by superficial excoriation. The treatment of these cases consists in the use of electricity and the application of blisters over the seat of injury. A last resource is to cut down upon the affected nerve and endeavor to relieve any constriction or pressure which may be found. If no such condition is detected, resection of a portion of the nerve might be advisable, since complete section is not apt to be followed by spontaneous trophic changes and since it has been found by some observers that resection of a portion of the affected nerve is sometimes followed by the arrest of the trophic changes.

NATIVE PLANTS INJURIOUS TO THE SKIN,

by Dr. James C. White, of Boston.

The object of the paper was to show that the number of plants growing native and cultivated in the United States, which are capable of exciting some degree of dermatitis by contact is much larger than is generally supposed and that cases of such inflammation of the skin not infrequently occur without being understood, because the patient has not been exposed to the two or three plants which alone are considered to be poisonous. He enumerated over fifty species which have irritating properties when brought in contact with the skin. With reference to rhus poisoning, the speaker said that the rhus toxicodendron was comparatively inoccuous, while the rhus venenata was the most poisonous species of this plant. The treatment is the ordinary treatment of dermatitis. There is no specific for this form of dermatitis.

The next paper was entitled:

NOTES ON DRUGS,

by Dr. H. G. Piffard, of New York, in which he referred briefly to several recently introduced preparations.

A FEW ADDITIONAL NOTES ON PSORIASIS,[3]

by Dr. F. B. Greenough, of Boston.

CHONDROMA OF THE UPPER LIP,

by Dr. A. R. Robinson, of New York.

The tumor occupied the right side of the upper lip of a man thirty-six years of age. It had been growing for two years and was one inch in length by three-fourths of an inch in diameter. It was egg-shaped, the broad end having its seat in the sub-mucous tissue among the mucous glands. The mucous and cutaneous structures were freely movable over the tumor, which was sharply limited, somewhat encapsuled and nourished by a small artery entering at the base. Microscopical examination showed the tumor to consist of embryonic, gland, and connective tissue. The gland tissue was formed of hypertrophied mucus glands and new gland tissue. The amount of new gland tissue could not be correctly estimated, because much that resembled gland tissue, represented an early stage in the process of cartilage tissue formation. The connective tissue was myxomatous, fibrous and cartilaginous. The myxomatous was present principally at the periphery and did not represent œdematous fibrous tissue. Fibrous connective tissue was present chiefly between the islands of cartilage. The bundles were small and the fibrils very fine and often rather indistinct in outline. There were several islands of cartilage, the largest being in the central part of the tumor. All varieties of normal cartilage were present, viz.: hyaline, fibrous and reticular and also the variety met with in the heads of cephalopods, namely, cartilage with ramifying or branched cells. (*Chondromes à cellules ramifies.*)

The cells showed great diversity of forms and sizes. The body of the branched cells presented a great variety of form. Some were surrounded with a capsule, but in the majority of cases this was absent, or only faintly indicated. In some places the islands of cartilage had joined each other but usually they were separated by the other constituent tissues.

The affection was considered to be very rare. It has been described by Paget, under the name of labial glandular tumors.

[3] Reserved for publication in this Journal.

KERATOSIS FOLLICULARIS, ASSOCIATED WITH FISSURING OF THE TONGUE AND LEUKOPLAKIA BUCCALIS,

by Dr. P. A. Morrow, of New York.

The patient, C. C., a sailor, aged twenty-one years, came under observation in December, 1885. Five years previously, soon after beginning his sea-faring life, he noticed a number of blackish points upon the back of the hands, some of which he squeezed out. Soon afterwards these appeared upon other parts of the body. They improved when he was on land, but were aggravated when he was at sea. The entire surface of the body with the exception of the face, palms and soles was found to be the seat of the follicular disorder. The ducts of the sebaceous glands were occupied by comedo-like bodies projecting sometimes one-fourth to one-half an inch above the surface. From many of the follicles, small white hairs protruded. The comedos when pressed out were hard and dry. The hard portion of the comedo was continuous with an adhesive substance dipping deeply into the follicle. There was no evidence of irritative or supurative action. They were not accompanied with itching.

The tongue was large and rough to the touch, the surface was deeply fissured, the fissures extending to the sub-mucous tissue. The buccal mucous membrane presented a bluish-white appearance, thickened and raised in places forming distinct plaques, which were superficially fissured. The patient stated that the tongue had been white and a little sore ever since he could remember. The absence of irritation or marked sensitiveness of the fissured organ was quite noticeable. Examination seemed to exclude the possibility of a syphilitic origin. The speaker referred to other cases which had been reported. He objected to the term ichthyosis since that suggests a disease of a different nature. He selected the term keratosis follicularis as more correctly expressing the pathological condition present as well as indicating the anatomical seat of the disorder. Drawings representing the microscopical appearances of the lesions was presented.

While in the hospital the patient improved decidedly under the use of local application of linseed oil. But within a short time of the discontinuance of the treatment, the condition became as marked as before treatment was employed.

EVENING SESSION.

A CLINICAL STUDY OF SCLERODERMA,

by J. E. Graham, M.D., of Toronto, Canada.

Dr. Graham first related the histories of two cases of this rare disease, one of which occurred in the practice of Dr. Smith, of Seaport, Ont., and the other was referred to him by Dr. Jenner, of Pictou. The first patient, Mrs. R., forty-seven years of age, had previously suffered from rheumatism. The hardening of the skin began in March, 1882, and was first noticed over the back of the neck. It gradually spread so that in about ten weeks, the integument over the greater part of the body was affected. The movements of the limbs as well as those of respiration were impeded. The internal treatment adopted was liquor ferri iodidi and liquor arsenitis. A Faradic bath over the surface of the skin was used. In six weeks the skin began to grow softer, and in ten months the patient was quite well. There has been no return of the difficulty.

The second patient, Mr. H., age thirty-seven, came under observation in May, 1886. There was a history of hereditary rheumatism. The disease had commenced some months previously. The first symptoms were stiffness of the limbs with œdema of the lower extremities. Then hardening of the skin over the hips was noticed; this gradually spread and was accompanied with pigmentation. He was given with some benefit potassium iodide at first, and latterly salicylate of sodium.

In his remarks in connection with the disease, the speaker referred to the following points; (1) That the disease is found principally in temperate climates and occurs in seasons when there are sudden changes in the weather. (2) That it is more closely related to rheumatism than has been supposed. (3) That although morphœa has in all probability a similar pathological origin to scleroderma, yet the clinical distinctions are so marked, that at present it is expedient to treat it under a different name.

DR. L. N. DENSLOW, of St. Paul. In one case of scleroderma in which there were two large plaques on each pectoral region, benefit has followed the daily use of the constant current.

CARCINOMA CUTIS,

by LE GRAND N. DENSLOW, M.D., of St. Paul.

The patient, aged forty-nine years, had been an invalid for several years. He had had a severe right pleurisy and presented the physical signs of absence of the right lung. The skin of the right chest from the second to the seventh rib and from the posterior border of the axilla to the median line was covered with a nodular new growth, which presented no ulceration. Around the nipple the nodular mass for an area of six square inches reached a thickness of one inch. The older portions of the growth were covered with thickened epidermis with thick brown scales. There was slight enlargement of the axillary glands. The different nodules were not movable beneath the skin, but the whole mass was free from the fascia. The mass was not painful on pressure but was the seat of occasional neuralgic pains. The duration of the growth was seven months. The patient died four months after coming under observation.

The autopsy showed obliteration of the right lung. The left lung presented many small solid nodules. In the mesentery there was a nodule one and one-half inches long by one-half inch in diameter. The microscopic examination of these masses showed that in them all connective tissue preponderated. The growth on the skin occupied the papillæ and the deeper portions of the corium.

DR. I. E. ATKINSON, of Baltimore. This case suggests what has been termed lenticular cancer in which the growth sometimes becomes perfectly continuous. These cases are exceedingly malignant. In a case of my own which presented appearances similar to that of Dr. Denslow's case, the disease ran its course in two or three months. These cases are so malignant that it would seem that no operative procedure is justifiable.

DR. R. W. TAYLOR, of New York. I might allude to two cases which were for a time looked upon as cases of cancer of the nipple, both in men. They eventually turned out to be cases of hard chancre, but in one case the induration was so great that carcinoma was strongly suspected.

(To be continued.)

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PHYSICAL TRAINING OF AMERICAN YOUTH.

THE importance in any educational scheme of attention to the needs of the body is not a discovery of those who are prominent at the present time in the matter of physical training, however much these persons have contributed towards the development of a rational plan for securing this end. Dr. Benjamin Rush, of Philadelphia, one of the signers of the Declaration of Independence, and one of the fathers of American medicine dwelt with great emphasis in his published writings on the need of suitable bodily exercise for students, recommending that "the amusements of our youth shall consist of such exercises as will be most subservient to their future employments in life." Dr. Wheelock, the first president of Dartmouth College, recommended the students of that institution "to the practice of some manual arts or cultivation of gardens or other lands, at the proper hours of leisure and intermission from study and vacancies." Farm schools, in accordance with these ideas, were established in some of the States in the early part of this century. At the foundation of Amherst College in 1821, a large tract of land was secured in which charity students might have a quarter or a half acre to cultivate as they might desire. Much of the work of laying out the grounds at that college was done, we are told, as a means of exercise by the officers and students; and the expressions "chip-day," "mountain-day" and "gravel-day" indicate an established custom at Williams College, when these holidays were granted by the faculty for the purpose of "fostering in the students the habits of physical labor and exercise so essential to vigorous mental exertion."

The requirements still in vogue in some of our seminaries for a certain amount of daily manual labor from each student, are doubtless the outcome of the ideas just referred to, although little can be said for the hygienic value of most of such work. Certain kinds of manual labor, which can be performed out-of-doors, can doubtless be made to contribute to the bodily well-being. Wood-chopping, whether done by a Lincoln in the days of his youth, or a Gladstone in the years of his maturity, may prove a valuable exercise. But in the

present conditions of life, it is safe to say there are few students in school or college who are so situated as to obtain from manual labor alone proper and adequate exercise. In saying this, we would not derogate from the value, on other grounds, of industrial training, or from the commendableness, for reasons of economy, of students paying their way, so far as possible, by manual labor.

Among the various "Circulars of Information" that have been issued from time to time by the National Bureau of Education, under the auspices of the Department of the Interior, few, we think, have been of greater practical value than one which has appeared during the past summer, prepared by Prof. E. M. Hartwell, of Baltimore, who is in charge of the department of physical training in the Johns Hopkins University. The work, which comprises a pamphlet of some one hundred and seventy-five pages, contains a pretty full report on the present status of physical training in American colleges and universities.

The first gymnasium in this country seems, according to this pamphlet, to have been that established in 1823 by Dr. Beck, himself a pupil of Jahn, at the famous Round Hill School at Northampton, Mass. This was followed in quick succession by similar institutions at Harvard, Yale, and Amherst Colleges, while in 1825, Dr. John Collins Warren, of Boston, became the first president of the Tremont Gymnasium, and endeavored to secure the services as instructor therein of Professor Jahn, the "father of the Turners." In this he was unsuccessful, but he was able to induce Dr. Lieber, a man famous in law, as well as in gymnastics, to take charge of the enterprise for a time.

The "new gymnastics," so far as the colleges were concerned, began with Amherst College, to which President Eliot has said: "the colleges of the country are indebted for a demonstration of the proper mode of organizing the department of physical training." The doctrine which forms the basis of this movement is that the best physical training will not aim to make athletes or acrobats, or to develop big muscles, but simply to secure the best functional use, and hence the highest health of the various parts of the body.

The list of colleges and institutions for secondary instruction which have built gymnasia since 1860 is given by Dr. Hartwell, with the respective expenses of construction, and in many cases, with sketches and plans of the buildings. This list comprises thirty-three buildings, and the cost aggregates $600,000. In addition to this, some $150,000 has been expended by schools and colleges for gymnasia which do not occupy an entire building; and a considerable number of "projected" gymnasia are mentioned, most of which, with a few others not mentioned in the book, have since been completed. We note with especial interest the establishment of gymnasia for the use of women at the following colleges: Vassar, Smith, Cornell and Wellesley, and Bryn Mawr. The last mentioned college has a remarkably attractive and well-planned building, completed at a cost of $18,000, with a main hall 80 × 30 feet, with running track, a room for special apparatus, bowling alleys, abundant bathing facilities, all arranged with reference to maintaining the strictest privacy, so that students may take their exercise without the least fear of intrusion.

The progress made in the matter of buildings and appliances for physical culture, though it leaves much to be desired, particularly in our public and preparatory schools, has been more rapid than that in the provision of proper instruction in the use of the appliances. Until very recently these responsible positions have been filled by men of the grade of broken-down boxers, superannuated drill-sergeants, acrobats and other "sporting" characters. But of late a corps of trained teachers of bodily culture has begun to be formed, from whose work we may hope to see good fruits.

May there not soon be, if there is not already, an opportunity for a new specialty in medicine in which regularly educated physicians shall undertake this eminently practical branch of "preventive medicine," making it their object to bring the bodies of the youth up to a standard of physical perfection, coincidentally with the training of their other powers?

The work of the *turnvereine*, described so graphically in Dr. Hartwell's pamphlet, as well as in the article by the same gentleman on another page of this Journal, has, we have no doubt, been somewhat discredited in the minds of American observers by the various heresies, political, religious and socialistic which have developed in that organization since it first began to be a thorn in the side of German absolutism. But the excellence of the physical results brought about by its means is indisputable. And our educational authorities might do much worse than to employ, at least for a time, until the regular teachers can be instructed as in Germany in the work of training the bodies of their scholars, some of those who have been educated under the auspices of this great organization.

It is quite evident from the facts presented in the pamphlet referred to, that much may with profit be learned from the system which during the last fifty years has occupied so important a place in the German volk-, student and army life. That the foremost military nation of the globe should place so little value on military tactics in comparison with gymnastic exercise for the purpose of developing the bodies of its soldiers as is shown by the statements taken by Dr. Hartwell from the latest *Vorschriften über das Turnen der Infanterie*, is a most significant fact, and suggests emphatically the deficiencies of that educational system in our country which has nothing better to offer our children physically than to allow a few of them to play at soldiers.

THE PHYSIOLOGICAL EFFECTS OF FEAR.

The recent earthquake in South Carolina, whereby many lives were lost, and a considerable part of the city of Charleston laid in ruins, has furnished a signal demonstration of the effects of terror on communities.

A large portion of the population, even those whose tenements were spared, were panic-stricken and abandoned their homes, spending their days and nights in the open air, some in tents, some with nothing to shelter them, and now that the alarm is subsiding and confidence is being restored, they are gradually returning within the precincts of the city. Eye-witnesses have described the terror as something unprecedented: especially among the negro population, who spent their time in wailing and supplication: many forgot to eat, and few were able to sleep. Many women became hysterical, and some men lost their reason; among pregnant females miscarriages were numerous.

The emotion of fear takes its origin in that strongest primordial instinct, the instinct of self-preservation. Conspicuous in its manifestations in the lower animals and among savages, where it is the parent of every superstition, not even the enlightened philosopher can wholly divest himself of the thraldom of this imperious power, especially during such convulsions of Nature as that above referred to, when men's confidence in the stability of the world under their feet is so rudely destroyed. A life-long experience added to the experiences of countless ancestral generations has led the generality of mankind to trust the seeming security of the earth's stability, and the revulsion of feeling and the maddening terror which they realize when this seems to fail them, is something that no words can describe.

Fear is essentially subjective, hence the lowest animals whose actions are judged to be purely reflex would seem to be devoid of it. Being the effective subjective expression of the instinct of self-preservation, it is, within certain limits, a healthful sentiment without which life would not long be possible, especially to wild animals. First called into being by the experience of pain, this emotion is early awakened in all animals by the ideal representation of pain, such ideal representation with the corresponding feeling being also, as Spencer has shown, inherited. Rising within the sphere of consciousness, and hence being presumably cerebral, this emotion, (or perhaps, to speak more correctly, the cause which produces it), instantly excites diffusive discharges of nervous energy, which tend to concentrate themselves on the nervo-muscular apparatus by which escape from danger is effected. If the latter be possible the fear shows itself the most powerful stimulus to self-protective action; witness the achievements of swimmers, swimming "for their dear life," or the speed and endurance of routed soldiers fleeing before a victorious foe.

But if fear under some circumstances is a healthful stimulus, as when it concentrates the nervous and muscular powers on the means of escape from threatening danger; under other circumstances, as when it is vague, ill-timed, or excessive, it is an evil, paralyzing the higher cerebral and the organic functions. In fact, fear is always reckoned among the depressing passions which lessen vital action. The intense concentration of the consciousness on the subject of dread, and the forebodings associated therewith inhibit the will and the judgment, rendering sane and deliberative action impossible. Generals, under the influence of fear, have been known to fly from the field of battle when their troops were winning the day, and strong men have surrendered their possessions to the unarmed highwayman, when a little courageous resistance would have given them an easy victory. A runaway horse and a panic-stricken herd are instances of animals rendered mad by fear. Fear may be so excessive as to inhibit all movements; this has been noticed in the case of the horse. The paralyzing effect of this emotion has at some time been remarked by every one who has been called upon to address a public audience.

The cardiac innervation is disturbed by fear; the pulse and heart beatings are accelerated, and fainting may ensue. This has been attributed to sudden anæmia of the bulbus, and paralysis of the pneumogastrics. This is one of the best known effects of fear; it is the action of the heart which is connected with trepidation and nervous excitement. The vaso-motor centre is weakened, and the vascular sluice-gates of the viscera are opened, hence congestions occur; fear has even caused jaundice and diabetes. The reproductive function is paralyzed; sometimes the sphincters lose their power of control. Digestion is interrupted; in fact, all healthy innervation is diverted from the digestive organs; the salivary, gastric and other secretions are arrested. Hence the nausea, vomiting, and diarrhœa, which often accompany emotions of terror. The peripheral coldness, the trembling, the intense muscular weakness which result from the circulatory and nervous disturbances, are well known. In fact, under the influence of fear, that equilibrium in the distribution of nerve force which is so necessary to the harmonious working of all the functions of the organism is broken.

The operation of this sentiment in civilized communities is still more influential than one would, at first thought, suppose; sickness may at any time cause a panic in certain circles; there are patients too, who, with trifling ailments, are all their life long under bondage to fear. One of the offices of the physician who realizes how states of pain depress all the vital processes, and how intimately and indissolubly the physical expression of the emotion is bound up with the subjective experience thereof, is to lift his patients out of this bondage of fear, and promote courage, firmness and all the elevating passions instead. "The susceptibility to terror," says Bain, "is a weakness and an evil, while the consideration of the means of avoiding or subduing it is of the greatest practical moment."

THE OVERCHARGE FOR PATENT MEDICINES.

THE very excessive prices over and above their actual cost often charged by manufacturers of patent or proprietary medicine for their goods have caused the authorities in several of the continental countries of

Europe to enforce certain regulations upon them for the better protection of the people.

Thus in Germany the police cause the medicine to be analyzed, and then they publish the name of the article, that of its proprietor or manufacturer, with the usual price charged for the preparation. With this is given the actual composition of the medicine as found by the analysis, and the ordinary cost of the ingredients. In Russia and Japan none of this class of preparations are allowed to be imported by the custom authorities except such as have been found upon analysis to contain no poisonous substance.

One of the most efficient methods for discouraging the sale of these preparations is to require each retail package to have upon its label a true copy of the formula of its composition. The effect of this in most cases would be to entirely suspend all demand for the preparation. This may be fully as efficient as any prohibition could be expected to be, and thus the desired result be gained without any unjust exercise of authority. It is in short, but an instance of a thing being justly regulated out of existence when an arbitrary prohibition would not be legitimate. Would it not be well if in this country this last mode of procedure was enforced by legislation?

MEDICAL NOTES.

NEW YORK.

— Dr. John Burke, a well-known practitioner of very large experience, died at his residence on Lexington Avenue, September 9th, at the age of fifty-nine years, of pneumonia. He was a native of St. John, New Brunswick, and graduated at the New York Medical College in 1849.

— A patient has died at Bellevue Hospital, who fired seven shots into himself with a 22-calibre revolver at the Grand Union Hotel, but in whose case, owing to the prompt and skillful interference of one of the house-surgeons of the hospital, life was prolonged for two weeks, and it was even thought for a time that there was an excellent chance of recovery. Five of the wounds were serious, and two of them were especially dangerous; one of the balls being fired into the top of the head, fracturing the skull, and another into the throat, severing the larynx. For the relief of these, trephining and tracheotomy were performed at a single sitting.

— Dr. Edson, of the Health Department, has been making an investigation of the milk brought to the city over the various railroads, and has found that in some instances it was diluted with as much as forty per cent. of water. On September 10th, he made a report to the Board of Health of an inspection recently made by him of ten candy factories. At one of them he found a quantity of Venetian red, which is used to give color to low grade chocolates, and in another, some burnt umber, which is used in the coloring of Christmas toy candies. In none of the other establishments were any pigments found in use which are deleterious to health.

— Dr. Thomas Alexander McBride, one of the most talented and promising of the younger physicians of New York, died, at the age of forty, on the North German Lloyd steamship "Aller," at sea, on the 31st of August. He had been suffering for some time from Bright's disease, and had spent the summer under treatment at Carlsbad. He improved to some extent, but after reaching Southampton, on his return to America, he became quite ill. His body was buried at sea. Dr. McBride was a native of Ohio, but received his medical education at the College of Physicians and Surgeons of New York, in which city he has since resided and practised. He was at one time lecturer on symptomatology in the College of Physicians and Surgeons, and at the time of his death was a lecturer in the Yale Medical School, and attending physician to the Presbyterian Hospital in New York. He had a large consulting practice in diseases of the nervous system and of the kidneys, and was held in the highest esteem not only on account of his professional attainments, but also for his many amiable and social qualities. He was the author of many medical papers of great value, and was an honored member of the Academy of Medicine, the Neurological, the Practitioners', and other Societies.

— The first case of yellow-fever which has come to the knowledge of the sanitary authorities for over two years in the city of New York, was discovered on September 5th. The patient was twenty-three years of age, and employed as a fireman on the steamship Alvo, of the Atlas Line, which sailed from Savanilla on August 12th, and, after touching at Carthagina, Aspinwall, Leinon, and Navassa, arrived at the port of New York on August 29th. The vessel passed quarantine on a clean bill of health, and on reaching the city the crew were paid off and went ashore. The fireman, Golden, took a room at a lodging-house on West Street, and then went on a spree which lasted for several days. On September 2d, he was taken sick, but as his illness was supposed to be the result of intemperance, very little attention was paid to him. On the 4th, however, he became delirious, and was removed by the police to St. Vincent's Hospital, where the case was regarded as suspicious, and was isolated and carefully watched. On the following day the symptoms were pronounced by physicians familiar with the disease, to be unmistakably those of yellow fever, and the patient was at once removed to the Reception Hospital at the foot of East 16th Street, where he died on the 7th. The lodging-house where the man had had his quarters was thoroughly fumigated and disinfected by the sanitary officials, and every precaution taken to prevent any spread of the disease.

— A party of Sanitary Inspectors and Health Department clerks who started out on the "Franklin Edson," a propellor belonging to the Department, to

see the race between the Mayflower and Galatea on September 9th, which was spoiled by the fog, had a most uncomfortable and trying experience. On the way down to the Sandy Hook lightship the machinery got out of order, and an hour was consumed in setting things to rights. Consequently, the "Edson" got down too late to see the start, and was compelled to keep in the wake of the long line of excursion boats; so that the party did not even sight the competing yachts at any time during the race. On the return homeward they were caught in the thick fog, and at eight o'clock the darkness was inpenetrable; while the pilot whom they had taken on board at Lewis quarantine, confessed, much to their annoyance, that he did not know where he was. The engine was stopped and the boat allowed to drift; the fog-whistle in the meanwhile, being blown continuously. After drifting for several hours, the engine was started again and the boat was steered by compass. She had not been in motion very long, however, when she ran aground on a sandbar which proved to be at the entrance of Rockaway Inlet. All attempts to back her off proved futile, and she lay at the mercy of the waves which washed over her decks. Most of the party were seasick and thoroughly alarmed, and the situation was altogether most unpleasant. It was nearly three o'clock in the morning, after they had been aground over five hours, before aid reached them. The signals of distress sounded on the steam-whistle had attracted the notice of the members of the life-saving station at Rockaway beach, a mile and a half distant, and a large boat was put out to the rescue. After being landed on the beach the party were compelled to walk nearly five miles to the nearest railroad station, where they finally took a train for the city at seven A.M.

Miscellany.

LAPAROTOMY FOR GUNSHOT WOUND OF INTESTINES.

DR. W. T. BULL, of New York, has performed another successful laparotomy for gunshot wound of the abdomen. A sailor, aged twenty-five, was shot in the abdomen, August 12th, at 7.40 P.M., the ball entering two inches below and to the left of the umbilicus. He was taken to the Chambers Street Hospital. Two hours after his arrival the abdomen was opened, the wound having been first explored and found to be penetrating. There were no symptoms of any inter-abdominal injury. The pulse was 94, respiration 24, and temperature 98°. Much blood was found in the cavity, the small intestine was pierced in two places, the sigmoid flexure in one, and there was a wound of the sigmoid mesocolon, from which copious venous hæmorrhage took place. The operation lasted one hour and a half, and was well borne. It was followed by no vomiting or other bad symptoms. There was but slight pain and a moderate tympanites. The pulse ranged between 90 and 110, temperature between 99° and 100°. There was a natural movement of the bowels on the fifth day. The case continued to progress favorably and now (at the end of the third week) the wound is nearly healed and the functions of the alimentary canal have been normal for two weeks. There has been no peritonitis.

A DANGER FROM PUBLIC BATHS.

AN interesting case is recorded by Dr. Aubert, according to the *British Medical Journal*, in which blennorrhœa was communicated by means of a bath. A lady consulted him for her child, aged four years, who for some days, had had an abundant vulvar secretion. The child complained also of pain and burning in passing urine. In relating the case, the mother stated that she herself had, for some weeks, been affected with a like discharge, and her husband with an urethral discharge. According to the lady's husband, this was due to drinking turbid wine; an explanation which, as it was satisfactory to the lady, was not questioned by the medical man. A microscopic examination revealed the gonococcus in the discharge from both mother and daughter. On further inquiry, it appeared that the child, three or four days before the appearance of the discharge, had taken a bath with its mother. No other possible source of infection could be thought of. In the same family there was another child which did not have the bath, and which escaped the infection. Professor Filippi, of Florence, commenting on this case (*Lo Sperimentale*, October, 1885), relates that during the previous year, fifty-five little girls were infected with vulvitis at the public baths of Santa Lucia at Florence. Some of the children also contracted severe purulent inflammation of the eyes. The only explanation of this outbreak was, that the contagion had been deposited in the water by some woman or child already infected. Professor Filippi goes on to remark on the hygienic and medico-legal aspects of the case. It is not always possible to make sure that people making use of public baths are free from every sort of infectious disease. Unless, therefore, the supply of water be undergoing constant renewal, the water ought to be changed for each person. The forensic aspect of the case is also important. When a child, with vulvar discharge, is brought for examination on account of a supposed criminal assault, the above-mentioned mode of infection ought to be borne in mind.

Correspondence.

ENDORSING PROPRIETARY HUMBUGS.

MR. EDITOR,— I beg to enclose you a very readable circular [1] which is being widely distributed in the section of country of which Podunk is the centre. Will you kindly peruse it at your leisure? In it you will see testimonials from many great men, alleged leaders of the profession, regarding the merits of the "new quinine."

If you will read the paragraphs that I have marked you will learn much. The first novelty to me was that "the most celebrated and widely-known physician and surgeon in the United States" is Montrose A. Paller.

Another matter of great surprise is that such men as Loomis and Howe and Drake should endorse such stuff as *kaskine* and should allow their endorsement of it to be spread broadcast over the country in this way.

[1] How Discoveries are Made. Kaskine.

Now in the neighborhood of Podunk malaria prevails, as you have reason to know, and there prevails there also a strong prejudice against quinine; and when I received this flowing announcement which I enclose, bearing autograph letters and temperature-charts and other endorsements from well-known men, I bought a lot of the stuff — being an inexperienced and youthful practitioner — and promised my patients a speedy deliverance from their ills without the use of quinine. I tried it, and I proved it in a large number of cases to be just as inert as so much flour.

No one knows how many others may have been deluded by the same men that deluded me. Have we no redress, Mr. Editor? Can these alleged "leaders of the profession" deliberately thus combine with the quack-medicine venders for some occult reason and bring discredit upon honest toilers like myself? Of course *I* shall not be again deceived by these men. It has lost me my reputation in Podunk and my office is now to rent. I must move, sir, hungry as I am, into some region where I am unknown, and through no fault of my own, but my credulity.

Do you wonder that the profession in this country stands upon a low plane? It seems to me that with such alleged *leaders* the plane must always be low.

Of course if I were not young and inexperienced I would at once have had my suspicion aroused by the very incredible reading at the beginning of the circular of this inert stuff; but being young and inexperienced I overlooked that when I saw the names and titles of the men that endorsed it.

I speak for many beside myself, sir, and I venture to hope that you will give us voice.

Your obedient servant,

JOHN COLLINS, M.D., OF PODUNK.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 4, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	—	—	—	—	—	—	—
Philadelphia	971,363	—	—	—	—	—	—	—
Brooklyn	680,000	327	190	30.60	11.11	19.20	.30	5.70
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	158	69	28.98	9.45	21.79	4.41	3.78
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	153	78	27.95	9.10	15.60	1.95	3.90
Cincinnati	325,000	128	66	29.64	12.48	17.94	1.56	7.80
New Orleans	238,000	—	—	—	—	—	—	—
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	77	22	16.90	7.80	5.20	2.60	2 60
Pittsburgh	190,000	83	41	44.40	8.40	20.40	7.20	6.00
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	17	8	47.04	17.64	35.28	—	—
Charleston	60,145	93	20	10.80	8.64	4.32	1.08	—
Worcester	68,383	24	14	24.96	8.32	24.96	—	—
Lowell	64,051	35	21	48.62	8 58	42 90	—	2.86
Cambridge	59,660	27	14	37.03	18.51	25.90	—	—
Fall River	56,863	18	9	38.88	5.55	38.88	—	—
Lynn	45,861	14	4	14.28	42.84	7.14	7.14	—
Lawrence	38,825	14	6	28.46	7.14	21.42	—	7.14
Springfield	37,577	12	2	25.00	25.00	16.66	8.33	—
New Bedford	33,393	17	5	29.40	5.88	29.40	—	—
Somerville	29,902	—	—	—	—	—	—	—
Salem	28,084	10	5	10.00	10.00	—	10.00	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	11	3	45.45	—	36.36	—	—
Taunton	23,674	12	6	33.32	8.32	16.66	8.33	—
Haverhill	21,795	8	1	50.00	50.00	25.00	12.50	12.50
Gloucester	21,713	8	5	50.00	37.50	37.50	—	—
Brockton	20,783	10	5	50.00	20.00	50.00	—	—
Newton	19,759	5	1	40.00	—	—	20.00	—
Malden	16,407	5	2	40.00	10.00	10.00	—	10.00
Fitchburg	15,575	6	4	50.00	16.66	50.00	—	—
Waltham	14,609	—	—	—	—	—	—	—
Newburyport	13,716	6	5	50.00	—	16.66	—	33.33
Northampton	12,896	1	—	—	—	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 1,279: under five years of age 616: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 382, consumption 141, lung diseases 60, diarrhœal diseases 240, diphtheria and croup 55, typhoid fever 29, whooping-cough 21, malarial fever 16, measles seven, scarlet fever seven, cerebro-spinal meningitis three, puerperal fever three, erysipelas one. From whooping-cough, Brooklyn 11, Pittsburgh three, Baltimore two, District of Columbia, Nashville, Charleston, Lowell, and Newton one each. From malarial fevers, Baltimore seven, Charleston four, Brooklyn three, District of Columbia two. From measles, Brooklyn three, Baltimore, Pittsburgh, Cambridge and Chelsea one each. From cerebro-spinal meningitis, District of Columbia two, Lowell one. From scarlet fever, Pittsburgh four, Cincinnati two, Lowell one. From puerperal fever, Brooklyn, Cincinnati and Nashville, one each. From erysipelas, District of Columbia one.

In the 22 cities and greater towns of Massachusetts, with a population of 1,037,445 (population of the State 1,941,465), the total death-rate for the week was 20.51 against 22.88 and 24.21 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending August 21th the death-rate was 19.5. Deaths reported 3,400: infants under one year of age 1.264; acute diseases of the respiratory organs (London) 151, diarrhœa 606, whooping-cough 52, measles 49, fever 40, scarlet fever 32, diphtheria 26.

The death-rates ranged from 11.9 in Derby to 36.8 in Norwich; Birkenhead 27.9; Birmingham 18.9; Hull 16.3; Leeds 18.6; Leicester 24.3; Liverpool 28.9; London 17.9; Manchester 20.2; Nottingham 16.8; Sheffield 20.3; Sunderland 23.7.

In Edinburgh 15.6; Glasgow 20.6; Dublin 21.9.

For the week ending August 21th, in the Swiss towns, there were 20 deaths from consumption, diarrhœal diseases 14, lung diseases eight, whooping-cough six, puerperal fever three, scarlet fever and erysipelas each two.

The death-rates were: at Zurich 3.8; Geneva 15.1; Basle 15.5; Berne 18.2.

The meteorological record for week ending September 4, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
Saturday, Sept. 4, 1886.	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...29	29.922	63.5	72.0	61.2	86.0	83.0	91.0	86.7	N.E.	E.	S.E.	5	16	4	C.	C.	O.	—	—
Monday,... 30	29.860	65.3	71.0	60.4	98.0	100.0	95.0	97.7	S.E.	E.	E.	4	12	10	G.	G.	O.	—	—
Tuesday,..31	29.738	67.9	81.1	62.2	90.0	95.0	82.0	89.0	S.W.	W.	N.	7	10	8	O.	R.	O.	—	—
Wednes... 1	30.142	62.6	71.0	57.1	80.0	41.0	53.0	58.0	N.W.	N.	N.	7	14	8	C.	C.	C.	—	—
Thursday, 2	30.409	59.3	65.9	51.7	70.0	56.0	83.0	69.7	N.	S.E.	W.	4	9	10	C.	C.	C.	—	—
Friday, ... 3	30.457	60.2	67.0	52.9	73.0	75.0	87.0	78.3	N.	E.	N.E.	4	11	8	C.	C.	C.	—	—
Saturday,. 4	30.437	59.8	64.5	55.2	97.0	78.0	90.0	88.3	N.	E.	E.	8	16	5	C.	F.	O.	12	0.96
Mean, the Week.	30.138	62.9	70.2	56.9				81.1											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING SEPTEMBER 11, 1886.

DICKSON, S. H., passed assistant surgeon. Detached from the Naval Academy, October 1, 1886, and ordered to Navy Yard, Washington.

LIPPINCOTT, J. G., passed assistant surgeon. Ordered to Naval Academy, October 1st.

SHIPPEN, E., medical director. Detached from Naval Hospital, Philadelphia, and ordered to attend officers of the Navy and Marine Corps at Philadelphia, not otherwise provided with medical aid.

HORD, WM. T., medical director. Detached from Examining and Retiring Boards, at Washington, October 5th, and ordered to Naval Hospital, Philadelphia, Pa.

DEAN, R. C., medical director. Ordered to duty as member of Examining and Retiring Boards at Washington, October 5, 1886.

BRANSFORD, J. F., surgeon. Detached from United States Steamship "Iroquois," and ordered to Naval Hospital, New York.

HALL, C. H. H., passed assistant surgeon. Detached from Naval Hospital, New York, and ordered to Naval Hospital, Yokohama, per steamer of 21st inst.

WOODRUFF, C. E., assistant surgeon. Ordered to Receiving Ship "Vermont," October 4, 1886.

ATLEE, L. W., assistant surgeon. Detached from the "Vermont," and ordered to the "Quinnebaug," per steamer of 25th inst.

BOGERT, E. S., medical inspector. Detached from the "Trenton," and placed on waiting orders.

FEREBEE, N. McP., surgeon. Detached from the "Trenton," and placed on waiting orders.

BIDDLE, C., passed assistant surgeon. Detached from the "Trenton," and placed on waiting orders.

SCOTT, H. B., assistant surgeon. Detached from the "Trenton," and placed on waiting orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE THREE WEEKS ENDING SEPTEMBER 4, 1886.

BAILHACHE, P. H., surgeon. To proceed to Cape Charles Quarantine as inspector, August 27, 1886.

FESSENDEN, C. S. D., surgeon Granted leave of absence for thirty days, August 30, 1886.

GODFREY, JOHN, surgeon. To proceed to Biloxi, Miss., and investigate alleged yellow-fever cases, September 1, 1886.

IRWIN, FAIRFAX, passed assistant surgeon. Granted leave of absence for thirty days, September 2, 1886.

DEATH.

Died, at Bar Harbor, Me., September 2, 1886, Charles Dudley Homans, M.D., M.M.S.S., of Boston, aged sixty years.

OBITUARY.—DR. CHARLES D. HOMANS.

Dr. Charles Dudley Homans of Boston died at Mt Desert on Thursday, September 2d. He was born in Brookfield in 1826, and was a son of Dr. John Homans. He was graduated from the Boston Latin School, and subsequently from Harvard College, in the class of 1846, a class which included among its members Calvin Ellis, George Frisbie Hoar, and Charles Eliot Norton. After his graduation from the Harvard Medical School in 1849, he studied in Paris and on his return commenced to practise his profession in Boston, and has continued in active practice up to the present time. He was one of the original appointments to the surgical staff of the City Hospital, and at the time of his death was the senior surgeon of that institution. He was president of the Massachusetts Medical Society in 1884 and 1885, an office which his father had previously held. He was, at the time of his death, president of the Massachusetts Humane Society, and was by direct descent a member of the Society of the Cincinnati, his grandfather having been a surgeon at the battle of Bunker Hill and throughout the Revolutionary war. He was also President of the Massachusetts Charitable Eye and Ear Infirmary, a Trustee of the Massachusetts School for the Feeble Minded, and held many other positions of trust. During the war he was one of the Massachusetts surgeons who went to the assistance of their overworked brethren at the front during the peninsular campaign. Dr. Homans leaves a wife (a daughter of the late Rev. Dr. Samuel K. Lothrop) and two children, a daughter and a son, Dr. John Homans, 2d, who is already established as a physician in Boston. The health of Dr. Homans has been gradually undermined during the past few years by a series of accidents,—a broken leg, an assault by an unknown assailant in the street, and a scratch received during a surgical operation at the hospital followed by unpleasant and serious symptoms, and which had rendered his friends anxious, but which he had apparently surmounted. His death was finally due to an occlusion of the gall duct and consequent jaundice. Dr. Homans was possessed of a high sense of honor and of an exalted idea of the dignity of his profession. He had a straightforward way of looking at matters which often easily solved apparent difficulties, and gave to his conversation a directness and a force which was characteristic. Though he played an important part in affairs connected with his profession and the public, his life was singularly quiet and uneventful. He was greatly attached to his work at the hospital and faithfully and punctiliously performed the duties of his position. The younger members of the surgical staff of the hospital are particularly indebted to him for a courteous support which was unwearied, and of late years for an example of the cheerful performance of duty under difficulties, which they will be slow to forget.

RESOLUTIONS IN MEMORY OF CHARLES D. HOMANS, M.D.

The Committee of the staff of the Boston City Hospital, appointed September 4th, report the following resolution:

The surgeons and physicians of the Boston City Hospital, sensible of the great loss which they have sustained in the death of their late colleague, Dr. Charles D. Homans, desire to place on record their appreciation of his distinguished services and his character.

Connected as he was with the hospital from its foundation, his fidelity to its interests and his conscientious attention to its laborious duties, even after his health had become impaired by surgical exposure in its wards, deserve our deepest admiration and respect.

A clear common-sense, which by a single sentence could settle differences of opinion in cases of doubt, and which was characteristic of him — a wide experience — a high sense of professional honor and a constant courtesy to all, combined to render his loss one of no common magnitude, not only to the hospital service and to the sufferers in its wards but no less to its professional staff.

DAVID W. CHEEVER,
GEO. H. LYMAN,
GEO. W. GAY,
Committee.

Original Articles.

CLINICAL NOTES ON SCABIES.[1]

BY F. B. GREENOUGH, M.D.

UNITED STATES ARMY

At the present time, scabies is, or certainly ought to be, one of the most thoroughly understood of cutaneous diseases, as to its cause, symptoms, course, treatment, etc., and it is with no hope of giving any new information on the subject that I have compiled the following brief clinical notes. Having had, however, the chance during the past few years of seeing a large, and recently a steadily-increasing number of cases, I have been much interested in the subject, and have thought it might perhaps not be entirely useless to record some of the facts to which my attention has been especially called. I wish to premise, however, that I have no intention of attempting to give a full account of a disease which is so well known to the profession as scabies, but shall simply refer to those points which have especially struck me, as being interesting in the quite large number of cases seen.

That scabies is much more prevalent at present than formerly in Boston and its vicinity, is shown not only by my individual experience, but by that of my colleagues who have charge of hospital dermatological services, as well as by the testimony of general practitioners. The probable reason for this very decided increase is to me one of the most interesting points of the subject. Scabies being contagious, its propagation to persons thrown into intimate relations with the individual who suffers from it is to be expected, but why, after being for some years comparatively rarely seen, it should all at once take a start, and increase in frequency very rapidly, is not so easily explained.

During and immediately after the war, as would be naturally expected, it was quite prevalent, and undoubtedly the large number of medical men who were connected with our army and navy service learned to recognize and treat it, and carried their knowledge of the disease with them into the practice which they settled into after the war was over. It certainly is a fact that for some years after the war, the disease became more rare, and it seems fair to assume that it was more rarely seen, because when seen it was generally recognized and properly treated. The new generation of medical men that heard little, and saw less of it, would naturally not always recognize it, and of course, every case that was not recognized became a focus of contagion. Whatever the cause may be, there can be no question but what scabies has increased in prevalency most decidedly, at least in Boston and its neighborhood. That such is the case the following figures will show. The special service for skin diseases at the Boston Dispensary was started July 1, 1873, and I had the honor of being put in charge of it. I saw, during the

1st year,	up to July 1,	1874,	. .	14	cases of	scabies.
2d	" " "	1875,	. .	17	"	"
3d	" " "	1876,	. .	25	"	"
4th	" " "	1877,	. .	3	"	"
5th	" " "	1878,	. .	6	"	"
6th	" " "	1879,	. .	3	"	"
7th	" " "	1880,	. .	10	"	"
8th	" " "	1881,	. .	8	"	"
9th	" " "	1882,	. .	25	"	"
10th	" " "	1883,	. .	39	"	"
11th	" " "	1884,	. .	85	"	"
12th	" " "	1885,	. .	156	"	"
13th	" " "	1886,	. .	160	"	"
				540		

[1] Read at the meeting of the American Dermatological Association, August 25, 1886.

The proportion which these cases of scabies bear to the number of cases of skin disease seen is as follows. I did not at first tabulate my whole number of cases yearly, but waited until I had 5,000 cases before doing so. These 5,000 cases covered, in time, from July 1, 1873, to November 25, 1876, and of these 5,000 cases 55 were of scabies, making a percentage of 1.1 per cent. From November 26, 1876, to June 30, 1878, I saw 2,494 cases of skin disease, of which eight were scabies, making 13 + per cent. After that date I recorded the cases yearly, the result being as follows:

From July 1,	1878,	to June 30,	1879,	total	872,	scabies	3 = .3+ %
"	1879,	"	1880,	"	804,	"	10 = 1.2+ %
"	1880,	"	1881,	"	1,023,	"	8 = .8— %
"	1881,	"	1882,	"	1,088,	"	21 = 2.0+ %
"	1882,	"	1883,	"	881,	"	39 = 4.0+ %
"	1883,	"	1884,	"	1,063,	"	85 = 8.0— %
"	1884,	"	1885,	"	1,299,	"	176 = 12.0+ %
"	1885,	"	1886,	"	1,220,	"	160 = 13.0+ %

From these figures it will be seen that while from November 26, 1876, to June 30, 1878, the percentage of scabies to other cases of skin disease seen was a little over three-tenths per cent., during the last dermatological year it rose to over thirteen per cent. During the past year I have asked the patients with regard to the number of similar cases in the same family or household which I had not seen, and, as a result, have 110 cases recorded as existing in addition to the 160 seen. These make, with six that I have seen in my private practice, 276 cases of scabies that have come under my cognizance in the past year. Up to three years ago, I had never seen a case of scabies in private practice. Those that I have seen since belonged to a class in which one would not expect to find this disease. From one of them I learned that in a neighboring small city the disease had become quite prevalent in an upper and decidedly exclusive social circle, affecting ladies, as well as men, and it seemed pretty evident that a very popular young gentleman had been the innocent source of the epidemic, he having brought the disease home with him from a yachting trip.

Considering the contagiousness of this disease, the fact that it is by no means self-limited, and the free circulation which exists between our cities and the county districts, the existence of such a number of foci of contagion might prove a source of serious trouble, especially if they were scattered over farms, in lumber camps or factories, where they would be brought in close contact with others, and where the disease would not be apt to be recognized. Since the end of our dermatological year, I have seen, in private practice, three more cases, two of them young gentlemen who had just finished their college course, and have incidentally heard of several others.

Scabies is, of course, not a disease that endangers the health of the community, nevertheless it is one that, if once well started, might be a source of infinite trouble and annoyance. If it should continue to increase, it seems to me that it would be well worth the while of our Boards of Health to take what steps they could towards controlling it. At least, some intelligent supervision of the children in our public schools might be attempted, and one of the most fertile sources of infection controlled. It would seem, however, that the increase of the disease has about reached its climax, as after an annual augmentation since 1881 yearly, from 0.8, 2 +, 4 +, 8, 12 +, last year it was 13 + per cent. Of the 549 cases seen, 339 were males,

and 210 females, respectively, about 60 and 40 per cent. The ages of the cases seen were as follows:

Under 1 year old, (1 each of 4, 5 and 6 mos., and 2 of 9 mos.)				5
Between	1 and	5	years,	26
"	5 "	10	"	65
"	10 "	15	"	75
"	15 "	20	"	85
"	20 "	30	"	182
"	30 "	40	"	62
"	40 "	50	"	23
"	50 "	60	"	12
"	60 "	70	"	5
70		80	"	1
				549

From this table it would appear that the disease is essentially one of childhood and early adult age, very nearly four-fifths of the cases, that is, 417 out of 549, occurring in patients between the ages of 5 and 30, and that after 50 it is comparatively rare, as only 16 cases were seen who were over 50 years old. This seems to be rationally explained by the fact of the epidermis in advanced life becoming harder and dryer, and consequently not being so well suited for the nourishment and propagation of the acarus.

The class of the community from which the bulk of these patients have been drawn, has been a matter of interest and surprise to me, it not having been that which one would expect. The children, as a rule, have been scholars in the public schools, and that is natural enough, but they have, with few exceptions, belonged to rather the better class of public school pupils, that is to say, they have been nicely, or at least cleanly dressed. The adult females, with the exception of some girls who worked in rooms where several of them were brought in contact with each other, were mothers of families, who had probably been infected by their children or husbands. The adult males have been, almost without exception, artizans or mechanics of the better class. Certainly the classes of tramps, beggars and low prostitutes have been conspicuous by their absence from the list of those seeking treatment for this disease. In most of the cases that were not married, both male and female, there was generally the history of a room mate, if not a bed-fellow, and I have no doubt but what the spread of the disease is in a measure due to the custom which young people, who are working for a living, have, of diminishing their expenses by sharing a room in common. One of the points that has struck me as most marked in the cases I have seen, is the comparative rarity of typical burrows. When I say comparative, I mean as compared with the cases I have seen in Vienna, Paris and London. I do not think I am at all overstating it when I say that even in well-developed cases of scabies, it has been decidedly the exception when I have been able to find a good specimen of a burrow. Whether this shows that our patients wash their hands more frequently and more thoroughly than those abroad, I am not prepared to say, but of the fact I have no question. The wrist, on its flexor side, in the fold of the skin made at the ulnar-carpal articulation in the vicinity of the styloid process, has seemed to me to be a more constant territory on which to find, if not burrows, at least the characteristic vesicles than even the classic region between the fingers. In the male subject the penis furnishes a most important field for examination. In a case that seemed to be at all fully developed I should consider the presence or absence of efflorescences on this organ as a most important diagnostic sign. The lesions found there are also very characteristic. On the shaft, or anywhere on the prepuce, I have seen perfect burrows oftener than any where else. As a rule, the lesions are papules, which may have a burrow on them, or may have become pustular or may be simply red papules, with a perfectly smooth and unbroken surface. I have, on the other hand, seen in this situation serpentine burrows without any signs of congestion, or exudation. In subjects where the glans is uncovered, papules may be found on it, which sometimes are pustular, but I have never seen a burrow on the glans, nor have I ever seen any efflorescence due to scabies, on a glans which was habitually covered by a long prepuce, that is, where the integument of the glans was a true mucous membrane. It was owing to the existence of these lesions on the penis that several patients came for medical advice, thinking that they had some venereal trouble, some of whom had already been put on constitutional treatment for syphilis. In spite of the most careful searching, I have never been able to find anything resembling a burrow outside of the region of hands, wrists and penis, except in cases of infants, on whose feet, especially in the vicinity of the ankles, I have seen very typical ones.

The secondary, if I may use the term, or artificial, lesions in scabies, that is those that are caused by scratching and rubbing, vary in the different regions of the cutis on which they are developed. This difference, although perhaps only one of degree, is pretty constantly seen in most cases. The regions most likely to show these lesions, are, the forearms, especially about the elbow, over the supinator muscles, the gluteal region, the abdominal walls, the anterior aspect of the thighs, and the lower leg. Given a general irritation of the skin, these regions, in the order named, are certainly the easiest to scratch. This is especially true with regard to the elbow, and in point of fact, it is in this locality that the result of irritation is most manifest. In this situation we frequently see a patch of crusty eczema, exactly like that observed on the cheeks or forehead of infants. In the gluteal region the scratching is more likely to cause single lesions, more like impetigo, even approaching a furuncular character, while on the anterior aspect of the thighs and lower legs, as is also the case on the abdominal walls, the lesions consist of small papules the apex of which has generally been scratched off.

I take it that the reason of constantly finding an eruption of an eczematous character about the elbows, is that from its situation it can be scratched or rubbed by day as well as night, but that the scratching is generally done outside of the sleeve, whereas in the other regions mentioned, at least during the night, the finger-nails get at the bare skin, and excoriate the raised papules. The aggravation of the itching after going to bed is one of the most constant symptoms complained of. It is generally ascribed to the heat of the bed-clothes, but I think that is not the only factor. Patients will state that any violent exercise, or getting heated in any way, will increase the pruritus, but not to the extent to which it is aggravated nightly on their retiring. It seems to me perfectly plausible to assume that during the night when the patient is quiet and seeking sleep, would be the time when the acari would be most active in getting their nourishment and moving about. Perhaps, also, the ease with which the itching regions can be scratched at this time, should be taken into consideration.

Be this as it may, the fact of the cutaneous irritation being decidedly increased after going to bed, is a very constant and important diagnostic sign. Any practitioner of medicine who has seen many cases of scabies, will in the great majority of those that are brought under his observation make his diagnosis from the general appearance of the case, that is to say, he will say to himself, this is a case of scabies, because it is, exactly as when we see a horse, we know it is a horse, and do not go through the process of deciding that it cannot be a cow because it has no horns, or a pig, because its hoofs are not split, etc.

Cases do occur, however, where the diagnosis is not so easy, and the ability to differentiate it is important. During the past two years I have seen several cases which I have diagnosticated, treated and cured as scabies, which if I had seen ten years ago when the disease was comparatively rare, I should not have recognized. As the disease is by no means a self-limited one, and each case is a possible or even a probable source of contagion to those who are brought in contact with it in early life, it certainly is a matter of considerable public importance that it should be diagnosticated and cured, and luckily it is one of the unfortunately few diseases that we can pretty confidently claim to be able to cure. That personal cleanliness, bathing, change of linen, etc., act as prophylactics, I suppose we must admit. I have no question but what I myself had a slight attack of scabies during the past winter. I had seen and handled many cases, and had handled them pretty thoroughly, as I was anxious to see if I could find any burrows in the general integument. I certainly had a great deal of itching between the fingers and about the wrists, and at night I scratched myself so as to make decided lesions on my forearms and shins. I never could find any characteristic appearances and just as I had made up my mind to treat myself, the symptoms gradually disappeared, as I believe, simply from the use of soap and water, in my daily bath. On the other hand, I had quite recently seen a young Harvard graduate, decidedly a swell, who tubbed it as much as any anglo-maniac and probably changed his linen daily, who was suffering with a very generally-developed case of itch.

In a few instances I have seen what would lead one to suppose that a personal susceptibility might have some influence. That is to say, I have seen two mothers of families of several children, all of whom had the disease, and yet the mothers escaped. I also have seen a child out of a large family affected, free from the disease although it was thrown in with the others, and in one instance, slept with an infected member of the family.

The finding a burrow in any suspected case, of course settles the diagnosis, but in my experience the cases in which this can be seen are not common. The distribution of the manifestations of the disease is what *we* have to fall back upon, and this is usually quite characteristic. If burrows are not to be seen, small vesicles, which are almost as characteristic, will be seen between the fingers on the ball of the hand, and at the wrist, with more or less lesions on the forearms, abdomen, gluteal regions and legs, according to the duration or severity of the attack. The condition of other members of the family is important, and the nocturnal aggravation of the itching should be taken into account. With regard to differential diagnosis, scabies might be, and without doubt, often is, confounded with any of the cutaneous diseases which have pruritus as a prominent symptom, and strange to say, its manifestations on the cutis, have in several cases which have come under my observation, been taken for those of syphilis, in which the absence of itching is universally noted. This mistake has been made not only by the patients, but by physicians, whom they had consulted. One would suppose that the irritation of the skin produced by the presence of vermin, that is, pediculi vestimentorum, would be very much of the same kind as that due to the presence of the acarus. The manifestations, however, of these two parasites are quite distinct, and can be easily recognized. The chief difference is to be found in the locality where the results of the irritation are seen. The body-louse, having its habitat on the clothing, irritates that part of the skin with which the clothes are most constantly in contact, that is to say, the shoulders, breast and waist — the uncovered hands not being affected at all. I should say also that the lesions, produced by scratching in cases of pediculosis, have decidedly a greater tendency towards a furuncular inflammation, and the pigmentation of the regions affected is much more marked. It is difficult to form an idea as to the comparative degree of itching from the account given by the patients, but I certainly have never seen the deep excoriations made by the finger-nails in cases of scabies that I have in patients infested with body-lice. As my figures have shown, the aged are comparatively exempt from scabies, whereas the victims of pediculi vestimentation are, as a rule, well along in life. I have been very much astonished by the fact that I have never seen a patient who was afflicted by the itch and body-lice, simultaneously, as one would suppose that the same influences that would expose them to the contagion of the one, would also to that of the other, that is to say, lack of cleanliness, and being thrown in contact with people of similar habits.

It is not easy to determine sometimes whether we have a case of commencing scabies, or one of hyperæsthesia or pruritus. As in cases of general pruritus the regions most easily scratched show most the results of scratching, we find in them the forearms, abdomen, gluteal regions and legs excoriated, very much in the same way as we do in cases of scabies. These cases however, are usually found in old people (pruritus senilis), where the age would be against scabies, or are due to a retention of the biliary secretion, in which case we should have the icterus to guide us.

I will not take time to refer to the differential diagnosis between scabies and urticaria, acute papular eczema, prickly heat, etc., but will merely say that scabies ought to be recognized (although my experience would show that it by no means always is) by the fact of lesions being found between the fingers, on the ball of the hand, and wrists, if not characteristic burrows, at least small vesicles; by the presence of characteristic lesions on the penis in the male subject; by the existence of secondary manifestations on the forearms, buttocks, abdomen, thighs and legs, more or less developed, as the case is of longer or shorter standing; by a decided increase of discomfort in the way of itching during the night, and by the fact that others who are thrown into intimate relations with the patient, are similarly affected. That it is important that it should be recognized and treated, I do not think that there can be any question of. I have been very much surprised by the success of

treatment in these cases. It has been so successful in my dispensary work that I have, as a rule, used the same method in private practice. The formula that I have used is the old sulphur ointment that Hardy introduced years ago at the St. Louis, one part of carbonate of potash, two of sulphur, and three of vehicle, for which I have taken petroleum ointment instead of lard, and I can not help thinking that its efficacy has been increased by the change. The objection to the use of sulphur is, of course, its irritating action on the eczematous and pustular secondary eruptions. I have, however, used it in the great majority of the five hundred and forty-nine cases I have seen, and with very good results. We were, until a couple of years ago, only allowed at the dispensary to order a half ounce of ointment, but now we can dispense two ounces. When one thinks of what two ounces will do in the way of treatment for a patient who is pretty well covered with the eruption, it certainly seems extraordinary that very few cases prove obstinate, as has been the fact. My instructions are to grease the hands thoroughly and a hand's breadth above the wrists nightly, and to apply it on the lesions on the trunk and limbs here and there, avoiding however any pustular or excoriative regions. In private practice I have ordered oxide of zinc ointment to be applied to the eczematous patches, and, even without any treatment, as a rule, these heal rapidly when the sulphur ointment has been used elsewhere for a few nights; I also, of course, giving directions as to baths, use of soaps, etc. There are, of course, more elegant preparations, but this does not stain clothing, and does its work; in fact, one of the most interesting results of my observations of these cases of scabies has been the decided success of treatment. In speaking so decidedly as to the usual success of treatment, I do not wish to be understood, as regarding the disease a simple one to treat; on the contrary, I have been very much surprised at this success especially in a class of patients that are not of the most cleanly, and without doubt, many cases have relapsed, or perhaps not even improved much, which I never have seen again. I think that one of the most important lessons to be got from a study of scabies, is the great advantage that would be gained to the community if such patients could be thoroughly treated by skilled employees of the hospitals and dispensaries, to apply the topical treatment properly, and if baths could be furnished for them. These, and a skilled supervision of schools, factories, workshops, jails and even general hospitals, would certainly furnish a great help in controlling if not stamping out the disease. The other points of interest to me, to which I have attempted to call attention, are, the fact of the increasing prevalence of a disease that ought to be, as a rule, so easily recognized; the rarity of typical burrows; the constancy of characteristic lesions on the penis in male subjects, and the difference of the secondary manifestations, according to the region of the cutis, they are developed upon.

— A lady who lost $60,000 at Monte Carlo recently, committed suicide. This is said to make the seventy-sixth case of suicide, owing to losses at gambling, from the beginning of the present season up to about the middle of August. In the last eight years there have been 1,820 suicides at that place.

THE DUNBAR TRAGEDY: WAS IT A MURDER, OR WAS IT A SUICIDE?[1]

BY D. B. N. FISH, M.D., OF AMHERST, MASS.

THIS case came under the observation of a medical examiner in a county adjoining mine, and my interest in it arose from facts learned by me during attendance at the inquest.

If, in the view here taken of it, I differ from some of my medical brethren, it is done in no spirit of criticism, for I realize the fact that it will probably never be determined by positive evidence whether this was a suicide or a murder, and that every one who forms an opinion will do it from his estimate of the probabilities in the case.

About ten o'clock on the night of the 4th of July, when the sound of a pistol-shot would attract little attention, a man was found upon a side street of a populous town, lying on the ground; the face rested on its left side, the body on the chest and abdomen. At first it was thought he was drunk; soon it was found that he was dead. On examination, a bullet-wound, which was apparently the cause of death, was discovered in the back of his head.

At the autopsy it was demonstrated that "the bullet had entered the head just under the occipital protuberance and just to the right of the median line. The skull was splintered at the point of entrance of the ball. The bullet had passed from the point of entrance upward and forward, and slightly to the right, till it reached a point a little forward of the middle of the skull, from one inch to one inch and a half, to the right of the middle line; then it passed downward, forward, and to the left at quite a sharp angle, and was found in the brain substance over the sphenoid bone, about one and a half inches from the forehead. The skull at the point of entrance was very thick, solid and fine-grained. The left hemisphere of the brain was perfectly normal. The socket of the left eye was found to contain a large clot of blood. It was impossible that the bleeding caused by the bullet should have reached the socket of the left eye. The lids of the left eye were infiltrated with blood and the eye protruded from its socket. There was clotted blood in the left nares. There was no other marks of violence. The hair was not burned nor singed, nor were there any marks of powder on the scalp, the skin or the clothing. There was no abrasion of the skin about the eye or on the face. It was the opinion of all the physicians present at the autopsy that the injury to the eye was caused by a blow on the eye." It was thought that there was no fracture of the sphenoid, ethmoid or orbital plates. The right eye was normal.

Near the body, about three or four inches from the right hand, lay a revolver of a pattern called the "Defender," calibre-32, long; this held one metallic cartridge — a 32, short — and one empty cartridge-shell. To this revolver, by a peculiar arrangement which will be described further on, was fastened a strong hempen string, ninety feet in length. This string, or cord, passed under the right foot and was stretched out along the road for about fifty feet; it was attached to nothing but the weapon. In the left pocket of the coat were three cartridges similar to the one in the pistol. The coat and vest were buttoned. The two

[1] Read before the Massachusetts Medico-Legal Society, February 3, 1886.

pocket-books usually carried upon the person were missing.

From the stand-point of the medical examiner was this a murder or a suicide?

The entire absence of powder-marks, the location of the wound of entrance, the course of the ball through the brain, and the absence of the pocket-books would seem to point to the probability of murder, while the ninety feet of string was a mystery in any view of the case. The arrangement of this string can be reproduced in the following manner: Tie a long cord, about six inches from one end, around the handle of a pistol, just back of the hammer and trigger, with a hard knot directly underneath the pistol; bring both ends of the string up over the hammer and tie in a hard knot directly over the hammer; pull the string back till it slips off the hammer, and the string, with its loop, will be seen as it was found on the "Defender." This loop could not be passed over the trigger and used for firing.

That this pistol was fired within the ordinary suicide limit is disproved by the absence of the scorchings and brandings of the powder, unless it can be shown that some intervening substance had been used, or that it is possible to hold a pistol so closely to the head that no marks of the powder would be seen. One witness stated that a hat was found pressed well down upon the back of the head; others said the hat was on the ground near the body. This hat was missing soon after the tragedy, and was admitted to have been burned by a member of the family, but the medical examiner had assured himself that there was no bullet-hole in it, nor powder-marks on it. I do not believe it possible to fire a pistol so closely to the head that some of the gases will not escape and burn the hair, but if this were possible, some unburned powder would follow the ball into the brain. No grains of powder were found in the wound, and the conclusion is obvious that this shot was fired beyond the limit of the powder-marks. It would seem impossible that one could hold a pistol at such a distance, and fire it so as to send the ball into the back of the head with the upward and forward direction seen in this case. Professor Maschka, of Prague, is quoted, in the *Medico-Legal Journal*, September, 1885, page 228, as laying down the following rule: "Certain well-known appearances, such as burning, singeing, dark discoloration, and hardening of the parts close to the wound, *must* be present for a theory of suicide." This positive statement, taken in its full apparent meaning, would leave no ground for the further discussion of this question; but Caspar has shown that suicides sometimes arrange for shooting themselves at a distance, by means of a string attached to the trigger of a pistol, and I hope to prove that it is possible to shoot one's self with a pistol held in the hand at a distance beyond the limits of the powder-marks.

The black eye, with the extravasation of blood into the orbit, was considered the result of a blow over the eye, and, therefore, evidence of a murderous assault. The three cartridges in the pocket might have been placed there by a murderer to excite a suspicion of suicide, while the absence of the pocket-books seemed to indicate murder and robbery, rather than suicide.

What did the ninety feet of string mean? In the hands of a confederate, it might have served as a means of signalling that the way was or was not clear; or it might have been used to pull away the pistol after firing, in order that no weapon be found upon or near the murderer, should he be apprehended immediately after the shooting, or should miss his aim, or should be discovered and suspected before firing. It was not possible that the pistol had been fastened to the fence or the telegraph pole near by, and then fired by means of the cord by the man himself, for the blood from the bleeding wound of the head had not run down his body or his clothing, as it would have done had he removed any fastening of the cord or pistol after the fatal shot.

The hour and the place were each alike favorable for murder or for suicide. But if this was a murder, what was the use of the peculiar loop of the string on the pistol? By pulling back the hammer, the loop could be slipped over it and used to fire the pistol. The "Defender" has its half-cock so far back that such a loop will slip off the hammer just before it reaches the half-cock, and thus the hammer can be snapped down on the cartridge; but the force of the blow is so slight, that a cartridge can be fired only after repeated attempts. It is not credible that a murderer would use such a clumsy contrivance for firing, for the repeated snapping down of the hammer on the cartridge would be too much like sounding the burglar-alarm before attempting to break into a house.

It was suggested that the string might have been passed under the foot, and the pistol have been fired by the man himself, using the loop over the hammer. This also could be done, and the firing done with some degree of accuracy. Would any use of such a string enable one to hold and fire a pistol, with any degree of accuracy, at the back of the head, and this at such a distance that the powder-marks would not show? From former experiments of my own with revolvers similar to the one used, and from the teachings of the authorities, it seemed necessary that this pistol, with its .32-short cartridge, must be held at least twenty inches from the back of the head to be sure of escaping powder-marks upon some part of the head or neck (a conclusion which subsequent experiments with a "Defender" appear to verify); yet I was obliged to admit at the inquest that I could not then, either with or without the string, hold a pistol aimed at the back of the head at a distance greater than nine inches, and at this distance could not be sure of my aim. But later observation and experiment showed me a method of holding the muzzle of a pistol at even thirty inches from the back of the head with an almost absolute accuracy of aim. Held in such a way, the pistol could be fired by the use of the loop over the hammer, and the string under the foot without using the trigger, but this gave no advantage either in holding or firing the pistol, for it could be fired easier and more accurately by using the trigger alone. After experimenting for a week, I pulled the loop back and well down on the butt of the pistol, and used the string under the foot as a "guy-rope" to steady the weapon. The latter was cocked and held in the right hand at arm's length, with the muzzle pointed towards the head — somewhat as one holds a pen. The butt rested on the little finger, the handle was grasped firmly between the other fingers and the thumb, and the trigger pressed against the palm of the hand. Held in this way, a contraction of the hand, so slight as to be hardly noticed, would fire the pistol. This method of using the string furnished a rest for the weapon, and its great advantage was at once apparent. The aim would be made certain by aiming the revolver at the right eye, and then turn-

ing the head half-way round. The cord would keep the hand from moving.

Here, then, is a possible method of firing the pistol with great accuracy at the back of the head, from such a distance that the powder-marks would not show, and a method reasonably accounting for the use of the loop and string. All that seems necessary to establish the probability of this use of the cord is some evidence of such use. The shoes found on the body were worn, and apparently had been recently wet. On the sole of the right shoe (under the instep), and on the left side of the shoe, were creases which can be exactly imitated by steadying a pistol with a cord in the manner above described, held between the thumb and fore-finger of the left hand. There was no crease on the outer or right side of the shoe.

Perhaps it will not be out of place to say here that it was the sight of the loop on the cord and the creases on the shoe which led me to change my belief in the murder theory to the conviction that this was a suicide, although I could not then account for the absence of the powder-marks. I do not believe that these creases, so exactly like those appearing on my own shoe after using the cord in the way I have described, were accidentally caused by pulling on the string at the time of finding the body; the pistol would not furnish resistance enough to make so well defined a mark as was found on the bottom of the shoe.

Was there anything impossible or improbable in the location of the wound, or in the course taken by the ball, provided the pistol had been held and fired in the manner described? A pistol can be aimed and fired so that the ball will strike any given point in a line from the eye to the occipital protuberance. It could be so fired that, if the ball continued its direction after striking the skull, it would make a wound similar to the one found in this case, but to do this would require a position of the head and arm that would be unnatural and strained, and therefore improbable, because there could be no conceivable advantage in trying to give such a course to the bullet. The easiest and most natural method of holding a pistol, aimed at the right side of the back of the head, would send a ball from the right to the left side of the brain provided it was not deflected from its course. A conical ball, fired within a short distance, from a first-class revolver of medium size, will, as a rule, pass into and through the brain in a direct course, but military surgeons have recorded many exceptions to this rule.

This bullet was apparently fired from a very inferior weapon, the "Defender," which, like many of its class, will often, I may say generally, throw a ball so that it will strike wholly or partly on its side rather than on its end, and thus may make a large wound of entrance although fired within a few inches of the head. When such a bullet strikes a rounded and unequally resisting surface, like the region of the occiput, it will be very easily deflected. Considering these facts, it seems very probable that the weapon was held in the more natural position, while the ball, deflected from its original aim, took the course described. At any rate, the location of the wound and course of the bullet do not need a theory of murder to account for them.

I do not believe the condition of the left eye was necessarily the result of any murderous assault. Black eyes, as the result of accident, are so common, and the possibilities of accident in this case so great, that I believe the condition of the left eye might be safely ignored. It was thought by some, as I have said, to have been caused by a blow over the eye, inflicted by the murderer before the shooting, and was held to be one of the stronger evidences of murder; but this seemed to me improbable even when I believed in the murder theory. If it could have been caused by a murderous blow, so slight that it left no mark upon the face, it might equally well have been accidentally self-inflicted; or might have been caused by striking a stone or lump of earth on falling after the shot; or the men who first discovered the body and thought it that of a drunken man may have accidentally struck the toe of a boot against the eye before life was fairly extinct. Any of these things were possible, and, in my opinion, far more probable than the theory that it was a second wound inflicted by a murderer. To adopt the latter theory would be doing great injustice to a very skilful piece of work. If this was a murder it was done in accordance with a preconceived plan to make it appear a suicide, as shown by the use of the pistol of the victim (or at least one like it), by the string and its mark on the shoe, and by the cartridges in the pocket. A man capable of planning and executing such a master-piece would be very careful not to furnish gratuitous evidence of murder by inflicting an unnecessary wound of the eye, either before or after the shooting.

But there is another possible explanation of the condition of the eye which seems to me the most reasonable one, and this is that the extravasation of blood about the left eye was a part of the injury caused by the bullet. Ecchymosis of the lids with extravasation into the orbit of one or both eyes often occurs during whooping-cough, and has been seen after excessive vomiting. It is not infrequent after gun-shot wounds of the head, and has even been observed after a fall upon a carpeted floor. I have found but little written on the subject of "black eyes" from gun-shot wounds, and must confess that I find no record of a case exactly parallel to this in which the effusion of blood appeared upon that side alone which was apparently uninjured. In the "Medical and Surgical History of the War,"[2] are recorded several cases in which ecchymosis of the lids was noted. Among these is the case of an unknown soldier (page 204), who was found "with a penetrating fracture of both tables of the left parietal bone at the anterior superior angle . . . the right eyelid (was) ecchymosed. A puffy swelling existed in the right temporal region . . . death ensued the same evening." In the absence of any record of autopsy it cannot be known what, if any, injury was done to the right side of the head by the ball, but the case is of interest as showing the absence of ecchymosis of the eyelids on the side known to have been injured, and its presence on the other or right side.

Lieut. Lilycrantz (page 193) "was wounded by the discharge of a pistol at a distance of about four feet from his head. The ball perforated the os frontis over the right supercilliary ridge. . . . A probe, five inches long, glided easily, by its own weight, its full length directly backward through the wound without coming in contact with the ball. . . . There was considerable extravasation in the cellular tissue of the eyelids and the pupils were dilated." In this case the

[2] Part I. Surgical Volume.

ball penetrated the *right* side of the brain while the lids of both eyes were ecchymosed.

The case more nearly parallel to the one under consideration is that of President Lincoln (pp. 305, 306). The ball entered the head "about one inch below the superior curved line of the occipital bone and an inch and a half to the left of the median line of the same bone. . . . Over the left eyelid there was slight ecchymosis." This was followed by "excessive extravasation into the orbits, accompanied by great ecchymosis of the eyelids." At the autopsy it was found that "the ball entered through the occipital bone about one inch to the left of the median line and just above the left lateral sinus which it opened. . . . It then penetrated the dura mater, passed through the left posterior lobe of the cerebrum, entered the left lateral ventricle, and lodged in the white matter of the cerebrum just above the anterior portion of the left *corpus striatum*, where it was found." This was about six inches from the entrance wound. "The ventricles of the brain were full of clotted blood. A thick clot beneath the dura mater coated the right cerebral lobe. There was a smaller clot under the dura mater of the left side. . . . Both the orbital plates of the frontal bone were fractured, and the fragments pushed up toward the brain. The dura mater over these fractures was uninjured. The orbits (were) gorged with blood." In regard to this fracture of the orbital plates, Dr. Otis quotes, with approval, the opinion of Prof. T. Longmore, of Netley, from which I make the following extracts: "The ball did not strike the anterior part of the cranium yet the orbital plates of both orbits were found to be the seats of comminuted fracture. . . . This double fracture was decided to have been caused by coutre-coup. If the term coutre-coup be limited to its precise signification of counter-stroke, that is, the impression made by the stroke on the part of the cranium opposite to that directly struck by the ball, will the force of coutre-coup explain the fractures in this instance? . . . I am inclined rather to attribute the lesions mentioned to a transmitted undulatory stroke or sudden impulse of the brain-substance itself, against the thin bony layers constituting the orbitar plates." "The unusually thin orbital plates on either side," says Dr. Otis, "were exposed to the impulse of the cerebral pulp. Even if they were not fully protected by the dense supra-orbital ridges, it might be inferred that the force would be transmitted mainly to the right orbital region, or that opposite the entrance perforation. Whereas *both* orbital plates were fractured. That the fragments inclined upward toward the brain rather than downward and forward, was probably due to the pressure of the blood extravasated within the orbits."

It will be remembered that in the case which forms the subject of this paper, the ball struck against the right side of the vault of the cranium and was deflected sharply towards the left hemisphere of the brain. If the medical examiner had not assured himself that there was no fracture of bone at any point other than that of entrance, the condition of the left eye might have been easily accounted for on the theory that the force of counter-stroke, or if, with Dr. Otis and Professor Longmore, we reject this, the impulse given by the ball to the cerebral pulp had fractured the sphenoid, or the orbital plate of the left, if not of both orbits. It is possible that the effusion of blood appeared first in the left eye because of the position of the body, and that it might have appeared later on in the other had it not been checked by the advent of death. It will be remembered that in the case of President Lincoln, who lived nearly nine hours after the receipt of his injury, the ecchymosis appeared first over one eye, while *both* orbital plates were broken. If, in the case under consideration, we must exclude any fracture of bone, can we not safely admit the possibility that the impulse of the bullet upon the brain-substance may have ruptured some minute branch of the ophthalmic artery and thus caused the hæmorrhage?

Having shown, as I think, that every feature of the injury to the head could be produced by a suicidal shot, it is time for an estimate of the probabilities of the case. I can not see an objection to the suicide theory that does not bear with equal weight against the theory of murder. The former seems consistent in all its parts, while the latter seems inconsistent and in some of its requirements apparently impossible.

On the theory of suicide this man, who was known to be possessed of remarkable ingenuity, who had a few months before purchased a pistol and cartridges similar to those found on the body, who is reported to have asked when buying the pistol: "where can a man shoot himself to cause instant death?" and to have been told "in the back of the head;" — this man determines to commit suicide, and to do it in such a way as to make it appear a murder. He arranges the string on the revolver in such a way that he can shoot himself from a distance that will excite a suspicion of murder, not necessarily knowing that he could fire it beyond the limits of the powder marks. He loads his pistol with two cartridges and puts three in his pocket. He starts out and is seen on the street, but suddenly disappears from the road, or, rather, is not seen to pass a house a little further along his route; he has turned off the road to leave his empty pocket-books, folded and clasped, in plain view in the rear of a building. Perhaps he here receives an accidental injury to the eye. He then goes down to a less frequented street, drops the loose end of the string and unwinds it as he goes. Now he cocks the revolver, holds it directly out from the shoulder at arms' length, adjusts the cord and makes it taut by an almost involuntary up-and-down movement of the hands which causes the cord to crease his shoe, takes his aim by the starlight, for it was starlight, or possibly by the phosphorus from a match rubbed on the top of the barrel and sight of his pistol, turns his face over the left shoulder, presses the palm of his hand against the trigger and the deed is done.

I have been told that this scheme is too ingenious to be credible, but *somebody* thought of this method of using the string before the officers of the law came upon the scene, and if that somebody was a murderer, he had a plan which involved all this and much more. This murdered man must appear to have committed suicide, but there must be evidence on and about the body to make it appear that he had endeavored to simulate a murder. The pistol of the victim by his side, the string with its loop, the buttoned coat and vest, and the creases on his shoe (to be made after the man had fallen), will excite a suspicion of suicide, while the absence of the powder-marks will indicate that he has attempted to simulate a murder by shooting himself at a distance. How much more simple and safe to have placed the weapon to the man's head and fired. His

own pistol by his side, the three cartridges in his pocket, and the buttoned coat and vest would have pointed strongly to suicide.

I have not introduced here the supposed blow upon the eye, for I do not see where, in the theory of murder, it can come in with any degree of propriety. No man holding a loaded revolver in his hand, with the intent to shoot his victim in a comparatively public place, would first knock him down, and then stand off and shoot him from a distance. If this was a murder, the assassin, after taking incredible pains to make it appear a suicide, would never have placed the empty pocket-books where they could be easily found, and thus, by his own act, arouse a suspicion of murder.

If we adopt the theory that this was a murder, with no attempt to make it appear a suicide, we have to account for the pistol owned by the victim, for the loop on the string, for the creases on the shoe — so unlikely to have been produced by accident — for the buttoning of the coat and vest at the risk of safety, after rifling the pockets, and for the folding and clasping of one, at least, of the pocket-books after taking what little money might have been in them.

I believe that the medical examiner would have been justified in reporting this as *a case of probable suicide, but one which demanded a legal investigation.*

At the inquest it was shown that the deceased was in straitened financial circumstances, and that he had an insurance on his life of $66,000.

In his summary of this case, Judge Tucker said: "It seems clear that this death was either a murder, accompanied by an attempt to make it appear a suicide, or a suicide with an attempt to make it appear to be a murder. A careful consideration of all the facts compels me to the conclusion that Mr. Dunbar committed suicide. This theory explains all the facts but one — that exception is the injury to the left eye. The evidence leaves it doubtful whether this injury was inflicted by a blow, or was the result of the shock of the bullet-wound. If the latter theory is true, then it is not inconsistent with suicide; if the former, then suicide seems impossible."

It hardly seems probable that the judge intended to exclude the *possibility* that the injury to the left eye was caused by accident, and when he says: "If the former theory — that this injury was inflicted by a blow — is correct, then suicide seems impossible," I must suppose him to mean a blow from the hand of an assassin.

The verdict was that Mr. Dunbar "came to his death by a bullet fired from a pistol, which bullet entered the back of his head, and that said pistol was discharged by his own hand."

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

ERYTHROXYLON COCA AND ITS ALKALOID COCAINE.[1]

COCAINE paralyzes the sensory nerves by direct action on the terminal filaments; and later on abolishes reflex action by like effect on the posterior columns of the cord. If injected directly upon a nerve-trunk (and this is well worthy of careful notice), it paralyzes its whole distal distribution. It stimulates the respiratory centres, but death is due to asphyxia, the heart continuing to beat after breathing has ceased.

The peristaltic movements of the intestine are increased, thus acting as a mild aperient. It has no appreciable effect upon the voluntary muscle, but its action on unstriated muscular fibres is yet undetermined.

Bosworth has noticed that the drug causes very notable contraction of the nasal corpora cavernosa, "the local application over the whole membrane covering the lower and middle turbinated bones causing these sinuses to become so rigidly contracted that all the blood which they may have contained is absolutely expelled and the membrane clings closely to the bony structures, which then become visible in absolute outline."

This he has confirmed by repeated observation, and has concluded cocaine "produces rigid contraction in unstriped muscular fibres." If this is so the contraction of the capillaries, as well as the sinuses may be due to direct action on their muscular coats, a method which, if I remember right, is shared only (though with paralyzed effect) by amyl nitrite. As the erectile tissue is dominated by the sympathetic, the whole phenomena, however, are fully explained, by the established action of the drug upon that nerve.

Locally applied it has slight (if any) effect upon the skin, unless denuded of epithelium. Superficial injection causes anæsthesia of the surrounding tissue to the extent of two or three inches, but deep injections affect the skin to a much less degree. When thrown down upon a nerve-trunk, while it affects the distal distribution, the centric portion, even a short space (immediately?) above the point of puncture, is uninfluenced. Dr. Corning has found when the local circulation, in a part into which a solution of cocaine has been injected, has been arrested either by an Esmarch bandage or a tourinquet, the insensibility induced by the drug may be greatly prolonged, as thus the solution of cocaine is kept in contact with the filaments of the sensory nerves. When painted upon the mucous membranes, the tissues become paler and thinner, secretion is diminished and sensation is completely annulled, the effect being greater at the actual point of contact of the drug, and is in proportion to the strength of the solution used, and up to a certain point of the number of applications made. May this not be up to a limit of topical absorptibility (saturation)? It renders the conjunctiva and cornea completely insensible, the ischæmia of the former being well marked, whilst it passes through the latter into the anterior chamber, as fluid extracted therefrom produces similar effects upon the other eye. "In eye under cocaine intra-ocular tension is decreased, and mydriasis is increased in a bloodless eye."

It dilates the pupil by local stimulation of terminal fibres of cervical sympathetic (the mydriatic nerve), and not by paralysis of motor oculi nor of circular fibres of iris. The degree of dilation seems to vary. Knapp, of New York, reports "pupil scarcely ever become as large as with atropine."

"Accommodation is not wholly lost, the range of accommodation being shortened by recession of the near point from the eye, the far point not being appreciably influenced," its action being more upon the ciliary muscle than upon the iris (Knapp.)

As a corollary to its contraction of the capillaries, the drug may yet develop useful qualities as a hæmostatic.

[1] E. W. Holmes, M.D. Therapeutic Gazette, August 16, 1886.

The contradictory reports of the action of the remedy may be reconciled, I think, either by exceptional idiosyncrasies, or from imperfect or insufficient methods of application, or from the use of inert preparations.

It should also be remembered that cocaine, being a product of organic chemistry is liable itself to deterioration, microscopic growths nourished by the alkaloid destroying its efficacy, boric or salicylic acid being the best preventives of this change. The leaves also contain another principle, "hygrine," an active mydriatic (though cocaine seems to produce mydriasis independently of hygrine), also ecgonin, coca tannin, and coca wax, whose effects, but slightly known to us, may yet modify our conclusions. Those who are interested in chemical analysis would probably be gratified to know that the formula for cocaine is $C_{17}H_{21}NO_4$, whilst in chemical terminology cocaine is a "methylbenzomethoxyethyltetrahydropyridinecarboxylate, whilst the impurity ecgonin is merely a methoxyethyltetrahydropyridinecarboxylic acid." Mack has succeeded in transforming benzoyl ecgonin into cocaine by heating several grammes with iodide of methyl and methylic alcohol, and then evaporating. The product conforms to all tests of genuine cocaine. Some of the samples used have been found to be adulterated with eserine. The fatal dose to man has not yet been reached. Twenty grains taken with suicidal intent, produced vertigo, unsteadiness of gait, headache, nausea, vomiting, burning thirst and abdominal gripings, all of which passed off in twenty-four hours.

I have applied from f℥iv to f℥vii (gr. 15⅔) of four per cent. solution to my own buccal pharyngeal and nasal mucosa in the course of four hours, and frequently less amounts to myself and others of same strength. In the smaller amounts, say ℥ii, there is a rather pleasing sedative effect, a sensation of well-being and well-doing, of content with yourself and your surroundings, which is sufficiently marked to afford a ready inducement to further appliance. This sedation has never with me run into somnolency, though others on whom I used small amounts *seemed* to experience such result, whilst in children, relieved by cocaine from toothache or earache, sleep, I think, naturally followed the freedom from pain. In the larger amounts there is to myself a sensation of intense cerebral activity, with augmentation of thought-processes, and especially with stimulation of imaginative perceptions and fancies, and I must confess there is a certain witchery which is apt to entice one to further indulgence. Sleep is totally abolished, whilst the continued application induces the rather actual wakefulness, with further a degree of restlessness, which finally becomes almost painful.

There is also vertigo and nausea, going on to vomiting once after ℥iss, and again after ℥v had been used, and very decided tremor of the voluntary muscles interfering somewhat with the use of the pen. The skin is covered with profuse cold clammy perspiration; the pulse is bounding (120), beating full and strong; the brain is on fire, and throbs with unnatural excitement. In fact, after using the ℥vii from eight to twelve, one evening, I could only break myself from its further use by decided effort, and could not compose myself sufficiently to go to bed till about 4 A.M., where I tossed with little sleep till my usual hour of rising, and in the forenoon endured an intense prostration it has seldom been my lot to experience, which by noon compelled me to abandon my daily rounds and return home, where two or three hours' sleep restored my pristine vigor and appetite. I can appreciate now, as never before, the glamour of opium and cannabis indica and the wretchedness of after-repentance. The loss of appetite is well-marked even with smaller amounts, and this is not at all satiety; the repletion of a Thanksgiving dinner, but with slight nausea, a disgust of food, which prohibits hunger, though there is not "the hollowness" of simple abstinence from food. So far as these practical trials on myself go, I would, in view of endurance of excessive fatigue, rather depend on the latent energy of something (to me) far more substantial than cocaine. It should be remembered the above is practically overstimulation — the sudden thrust of an excess — upon an organization unused to any stupefacient, whether in the form of opium, tobacco, or alcohol; ℥i of four per cent. solution contains about gr. 2½, mxiii of four per cent. solution contains about gr. ¼, whilst a handful of leaves, say ℥i, only gives up gr. $\frac{1}{16}$ of the alkaloid. The dose by the mouth is gr. ½ to gr. ½.

The rapid sketch I have given must suffice for the most part as indication of the range of usefulness of the drug. I cannot, however, too strongly urge that the anæsthetic effects are purely local, even that upon the nerve-trunk, and the slight or negative effect upon the skin coming under this category, and that to secure the best results, sufficient care must be exercised to convey the solution to the parts indicated. It has been used successfully in operations upon the inner surface of eyelids and tear-passages, and on the eyeball in iridectomy, operations for cataract and glaucoma, and even in enucleation. As a number of failures to induce complete loss of sensibility in the last-mentioned use have been reported, allow me to add emphasis to my caution by a quotation of Turnbull's *modus operandi*:[2]

"In a case of enucleation, two drops of four per cent. solution of cocaine were instilled every three minutes until eight had been used. When Tenon's capsule was opened, one drop of the solution was allowed to flow into the cup. As each tendon was caught up in the hook, a drop fell upon it, and the successive tentomies, each being preceded by a drop, were made at deliberate intervals. The large blunt-pointed scissors, curved on the flat, were next introduced from the nasal side, and with these in position, after thorough sponging, two or three large drops were so instilled as to flow down the blades, one on each side of the optic nerve as a guide. After waiting a minute, the optic, and with it the ciliary nerves, were severed at one stroke, during which the patient remained entirely quiet. There was less than the usual bleeding, and the healing was undisturbed." (Knapp, p. 26).

Outside of ophthalmology, the field is too extended for individual mention. The journals are replete with notes of cases. Some of the less obvious may be given a passing notice. Thus it finds a favorable application in acute atitis media, in removal of small tumors from various parts of the body, and in the lancing of abscesses.

Papilloma of the larynx has been successfully removed with its aid, and operations for fistula in ano, vesico-vaginal fistulæ, and lacerated cervix and perineum have been painlessly performed. Dr. C. H. Thomas, of Philadelphia, claims for it the property of

[2] Med. and Surg. Reporter, November 9, 1884.

reducing inflammation and engorgement of the tissues in diseases of the endometrium.[3]

Circumcision has also been equally satisfactorily done. The mucous surfaces of the prepuce being first carefully cleansed, then slightly moistened, cocaine, in powder, is dusted on the surface to obviate pain from first stab of the needle, then hypodermics are given (four per cent. solution), four minims on dorsum, near frænum, and on each side (sixteen minims in all). Even a hydatid tumor of the liver has been opened and emptied under cocaine. In this case the patient was seventy-two years old, and ether was contraindicated by his general condition. Four per cent. solution was rubbed in for half an hour. Skin and subcutaneous fat passed with trivial pain. Fresh applications were necessary as muscles and peritoneum were reached. The operation lasted an hour. No shock and no peritonitis followed. Patient died on twenty-second day after operation, from inanition due to complete absence of bile from the alimentary canal. Soon after eating, the flow of bile from the sac was very great. The autopsy showed no peritonitis.

The dysphagia and violent irritative cough of laryngeal phthisis have been ameliorated, thus giving us some control not hitherto possessed over these distressing symptoms, though not the complete mastery we were led to hope for. The relief of cutting pains of first stage of labor has followed its application to tissues about the cervix, whilst its endermic use has enabled the painless passage of the head through the actium vaginæ. In senile gangrene, its application has relieved the severe pains of that dangerous disease.

In confirmation of the action upon the nerve-trunk, Dr. Nash, of New York, injected mx viii of four per cent. solution as near as possible in the infra-orbital foramen, reached through the mucous membrane of the mouth. There was complete anæsthesia of the left half of the upper lip and cheek, on both the skin and mucous surfaces; also a portion of the nose and left side of lower border of the gums, from the median line beyond the bicuspids. He inserted a gum wedge very firmly, causing no pain, and excavated and filled the tooth without giving the patient a sensation of pain, although before the injection the tooth was exquisitely sensitive. A similar result followed injection of eight minims into infra-dental nerve at point of entrance into ramus of jaw. An epithelioma has been treated by arsenical paste, the patient being readily able to endure its caustic action by reason of the remedy.

In leaving this part of my subject, I trust it has been well noted that the drug is not too rapid in its action, and that time should be given between successive applications for the preceding to take effect. Of cocaine, when taken by the stomach, I have little to say, my own experience beyond operative measures, and for irritative cough being designedly limited to its local use in hay fever, of which I have spoken elsewhere.

The fluid extract is reported to be a valuable adjunct for treatment of the morphine habit, but is not a specific. Cocaine is said to dilate the pupil contracted by morphine, and to allay the morphine hunger. In chronic alcoholism it is also serviceable, though a case reported to the Mississippi Valley Association of its treatment by gr. 1-5, hypodermically, was followed by cocaine habit, the patient using gr. x daily.

The irritation, when used hypodermically, is not greater than that from morphine, mxx to xv (four per cent. solution), usually causing no constitutional symptoms beyond vertigo, pallor, and dilatation of pupil, whilst larger ones may cause nausea and vomiting also. The effect of the drug lasts according to the strength of solution, and number and efficiency of applications. It would not be strange in a remedy of such marked peripheric force, if investigation would show a further centric impression than is at present accorded to it, but of this additional observation is necessary.

In the later journals, reports of ill effects have not failed to appear. It is said exfoliation of the corneal epithelium, vesicular keratitis, lasting several weeks, and panophthalmitis have succeeded its application. In other cases, general intoxication, nausea and vomiting, lasting an entire day, stumbling gait, syncope (cerebral anæmia?), pallor and sweating, loss of consciousness, and convulsions are said to have ensued.

In one case that came under my own notice, the use of upwards of f3i (four per cent.) applied to the nostrils was followed by a disagreeable dyspnœa (over-stimulation of respiratory centres), lasting a considerable time.

Whilst it is by no means established that all the above are surely chargeable to the drug, there is enough to make us watchful and by no means indifferent to the possible results, even though the more grave effects may be exceptional; may be from excessive quantity or from individual idiosyncrasy.

It may be worth mentioning in passing, that the case of poisoning from gr. x hypodermically,[4] resembling morphine-poisoning, is not free from suspicion, owing to the large amounts of alcoholic stimulus injected.

A number of instances of addiction to the excessive employment of the alkaloid have already been reported in our own country. Whilst we are not justified in jumping at any conclusions upon the evidence thus far presented, we are indeed urged the more to greater caution in its prescription both for others and ourselves, with added emphasis to the old adage "A man his own lawyer has a fool for a client."

Dr. Charles N. Dixon Jones, of Brooklyn, writes to the *New York Medical Record*, July 3, 1886, as follows:

"Gastric lavage is rapidly becoming our most reliable treatment in chronic dyspepsia and gastritis. In order to avoid some of the disagreeable features attending this operation, I have resorted to the following expedient: About fifteen minutes before commencing the operation the patient is allowed to hold in his mouth a piece of absorbent cotton saturated with a four per cent. solution of hydrochlorate of cocaine; in a few minutes the palate and fauces are painted with the same solution. The stomach-tube is lubricated with a mixture of olive oil, oil of wintergreen, and cocaine, after which it may be introduced and the stomach irrigated without that disagreeable vomiting of the tube and efforts at gagging which frequently attend the operation. I have adopted this method in some of the most trying and difficult cases, and always with the most happy result."

Bockharb recommends in the *Monatshefte für Praktische Dermatologie*, No. 2, 1886, cocaine as an efficient remedy for the painful tumefaction of the gums occasionally observed in the course of a mercurial treatment. A ten to twenty per cent. solution of the

[3] Am. Journ. Obstet., February, 1886.

[4] Medical Record, November, 1885.

hydrochlorate of cocaine is to be brushed over the affected part several minutes before mealtime. If the mucous membranes present (mercurial) ulcers, a five per cent. solution of cocaine suffices. The brush is to be disinfected with carbolic acid after having been used, as the solution would otherwise soon undergo decomposition through the agency of the bacteria of the mouth.

STROPHANTHIN.

Professor Fraser,[1] after a careful study of the action and uses of this substance, has published a very interesting and valuable account of his experiences as well as the excellent results of its use in a number of cases. He is of the opinion that if a substance could be obtained which exerts a more powerful action upon the heart, and at the same time produces fewer secondary actions, it is not improbable that therapeutic experience would prove it to be a valuable substitute for digitalis, and would even place it in a higher position as a remedy than that substance. This anticipation is to some extent supported by the examination of strophanthus (hispidus?) which is used in equatorial Africa as an arrow poison. The seeds are very active, and, when coarsely ground and formed into a paste, they constitute the poison with which the arrows are smeared. When examining the chemical properties of the seeds Professor Fraser easily separated a crystalline body, having a strangely bitter taste, readily soluble in water, of a feebly acid reaction. It does not contain nitrogen, and when heated with dilute sulphuric acid it yields glucose and a body insoluble in water.

The pharmacological action of strophanthus appears to be an extremely simple one, and may be described by calling it a muscle-poison. However introduced into the body, it increases the contractile power of all striped muscles and renders their contractions more complete and prolonged. As a result of the action on muscle, the heart is powerfully affected.

The changes which occur in the heart's action are the ordinary changes that have been frequently described in the case of digitalis, and they are accompanied by a rise in blood-pressure, which appears to be directly produced by them, and, in certain conditions, by an increased secretion of urine, and a reduction of temperature.

Strophanthus was administered with a view of discovering whether it would serve as a substitute for digitalis. This has been done in a large number of cases, a few of which are reported in the original paper with pulse tracings which are very flattering to this new drug.

The impression received from a number of cases suggested that strophanthus is more powerful and more rapid in its action than digitalis. As it is difficult, by chemical observation alone, to prove the existence of differences between remedies that act in a similar manner, Professor Fraser determined to ascertain if any important pharmacological differences could be discovered, and experiments were made to define the energy of this action on the part of digitalis and of strophanthus. For this purpose, the separated frog's heart was used, and it was supplied with solutions of each substance by means of Williams' apparatus. It was found that solutions of digitalis of 1 part in 100,000, 1 part in 50,000, 1 part in 10,000, 1 part in 5,000, and of 1 part in 4,000, each produced characteristic changes in the heart's action but were not strong enough to kill the heart within two hours. With strophanthin, on the other hand, a solution of 1 part in 100,000 quickly stopped the heart's action in extreme systole. solutions of 1 part in 250,000, of 1 part in 500,000, of 1 part in 1,000,000, up to 1 part in 10,000,000, were each tried, with the result that the heart was characteristically affected, and killed by each of them.

Assuming that the digitalin was a fairly representative specimen of that substance, these experiments point to a very striking difference between strophanthin and digitalin, in reference to their power of producing the changes in the heart's action, which constitute a most important feature in the therapeutic applications of the members of the digitalis group.

It seems probable that strophanthin differs also from digitalin by acting more on the heart and less on the bloodvessels than digitalis.

The experience thus far obtained shows that sickness and gastro-intestinal disturbances are not produced so frequently by strophanthus as by digitalis, nor has intolerance occurred after its uninterrupted administration for several weeks.

The original article deserves careful study from those who are interested in this subject as in it are the mature results of Professor Fraser's labors extending over a long time; the first publications by him on this subject were made in 1870.

(To be continued.)

[1] British Medical Journal, November 14th, 1885, p. 905.

Hospital Practice and Clinical Memoranda.

EXTENSIVE PHLEBITIS AND PELVIC ABSCESS, FOLLOWING ABORTION.[1]

BY FRANCIS MINOT, M.D.

The patient, a married woman, thirty years old, entered Massachusetts General Hospital January 23d, 1886, and died March 12th.

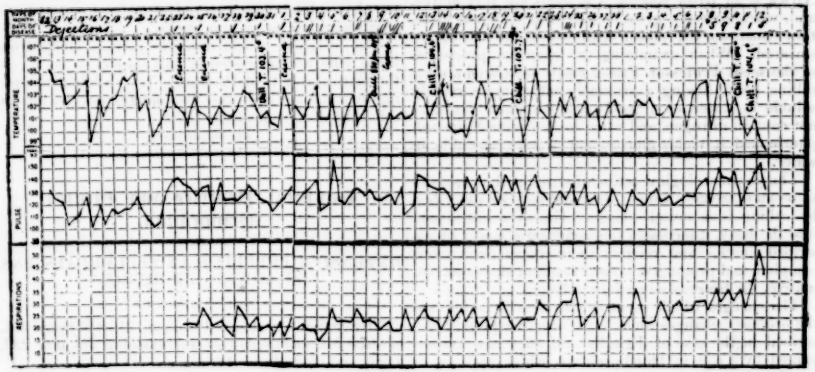
Five weeks before entrance she aborted at the third month, without assignable cause. She stated that the entire ovum came away, but she had much flowing for several days. Two weeks after the abortion she had a chill, and another a week later, with vomiting, diarrhœa, pain in the pelvis, and painful micturition. The left lower extremity became painful, swollen and numb.

The patient was much emaciated, with a sallow complexion, and anxious expression. The pulse was small and feeble. There was no evidence of disease in the lungs or heart. The entire left lower extremity was swollen, œdematous and white. There was a small ulcer on the lower part of the calf, resulting from the application of a hot stove-cover during one of the chills. There was much tenderness, especially in the saphenous region and in the calf. No hypogastric tenderness. No vaginal discharge. After January 31st, there was a slight improvement for a few days, and then there was pain in the right calf. The slough on the left leg increased, and another formed on the heel, and the patient slowly failed in strength. Nothing abnormal was detected by digital

[1] Read before the Obstetrical Society of Boston, May 8, 1886.

examination on February 5th. There were chills from time to time, with rapid pulse, high temperature and involuntary dejections. The œdema and the pain in the left leg began to diminish February 14th, but there was no general improvement. There was enlargement of the spleen. On March 7th she was much more comfortable than usual, but on the 8th she had several small, yellowish, and very offensive dejections, containing pus but no blood, and without pain, which continued till her death on the 12th, with symptoms and physical signs of pulmonary œdema; about seven weeks after her entrance into the hospital, and twelve weeks after the abortion.

Autopsy by Dr. Fitz. The inferior vena cava contained a completely obstructing thrombus in the lumbar region, adherent to the wall of the vessel. It was of a reddish color, and tubular, with fluid puriform contents. It extended upwards as far as the liver, as a yellowish-white, parietal thrombus; and downward into the right femoral vein as a completely obstructing thrombus, the centre being softened, like the portion higher up. The left iliac vein was completely obstructed by a pale-red, translucent fibrous plug. The walls of these veins, especially the left iliac, were intimately adherent to the surrounding parts by fibrous tissue. Both renal veins contained opaque white thrombi, not completely obstructing. The uterus and left broad ligament were intimately united to the pelvic wall and left half of the rectum. The left ureter and left third of the posterior wall of the bladder were adherent to the surface of the uterus and pelvic wall toward the base of the peritoneal cul-de-sac. In detaching the uterus from its adhesions the cavity of an abscess, with shreddy walls and offensive reddish-yellow contents, was opened. It extended from between the bladder and vagina to the left side of the pelvis, as far as the brim of the pelvis, and followed the surface of the iliac muscles. A limited purulent infiltration was found just below the bifurcation of the aorta. Near the brim of the pelvis the abscess communicated by a hole with the rectum. The uterus was slightly enlarged; its tissue presented no abnormal appearance. The Fallopian tubes were normal, except that the fimbriated extremity of the left



one was adherent to the wall of the abscess, and was covered with a patch of false membrane. The left ovary was intimately connected with the abscess-wall; it was enlarged to the size of an almond, flaccid, and its surface was wrinkled. On section it showed pus cavities and diffuse purulent infiltration. The right ovary showed nothing abnormal. The left broad ligament was almost wholly destroyed, except the portion covering the Fallopian tube, which was swollen and injected. The lungs were extensively œdematous in the lower and posterior portions. In the secondary branches of the right pulmonary artery were soft, opaque, yellow emboli, moderately adherent. Similar emboli were found in the smaller branches of the pulmonary artery in both lungs. The heart, liver and kidneys showed evidence of granular degeneration. The spleen was enlarged to three times the normal size, of a pale reddish-gray color, and soft; the follicles were enlarged and distinct.

The circumstances attending the attack of phlegmasia dolens in this case were the usual ones: debility from loss of blood and probably unfavorable hygienic conditions, a chill, and painful swelling of the left leg. There was also pain in the pelvis with dysuria, and it seems probable that the starting-point of the process was a phlebitis in the uterus or its annexes. Although the patient thought that the ovum came away entire it is quite possible that some fragments may have been left behind, giving rise, under unfavorable hygienic conditions to septicæmia which was followed by thrombosis and abscess. It is remarkable that there was no special abdominal tenderness, and that no swelling was detected by internal examination. The question of laparotomy might perhaps have been entertained had the patient come earlier under treatment; but in her exhausted condition the indications for operative treatment were not encouraging, moreover the signs of pelvic inflammation were very obscure. The great irregularity of the temperature, with occasional wide oscillations, the rapid pulse and the frequent recurrence of chills, as shown by the chart, are characteristic of septicæmia.

—The building of the Medical College of the State of South Carolina was almost ruined by the late earthquakes.

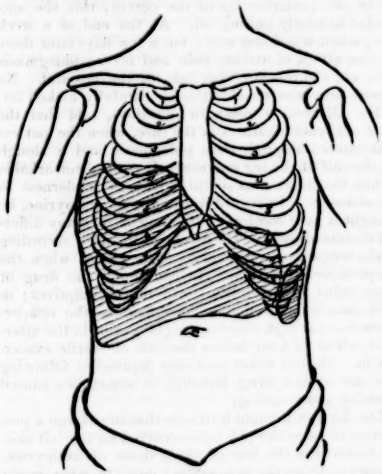
HYPERTROPHIC CIRRHOSIS OF THE LIVER.[1]

BY A. L. MASON, M.D.

CASE I. Julia Poivell, aged thirty, married, a very large, fat woman, entered the City Hospital April 11, 1883. She had had one child and three miscarriages, the last within five weeks of admission. Otherwise her health had always been excellent until within two months. She had been a free drinker of beer, but her nerves were steady, and she had not the appearance of a drunkard. There had been no headache and no hæmorrhages; no chills.

When first seen the condition was as follows: intense jaundice; constant nausea and bilious vomiting soon after eating; dizziness, flatulence, and occasional diarrhœa; pain at epigastrium; slight œdema of feet and ankles. The tongue was clean; the pulse 80, temperature 97.8° F.

The urine had a sp. gr. of 1017, a deep yellowish-red color, and contained a little albumen and much



bile pigment. Sediment normal. Dejections hard, light yellow.

Physical examination showed great enlargement of the liver and spleen, the former extending from the third intercostal space nearly to the crest of the ilium, and the spleen being readily felt below the ribs. No ascites. Examination of the blood showed the red and white corpuscles in normal proportions.

Three days after entrance the epigastric pain and the vomiting were severe, and were relieved by small doses of morphine. Under this treatment, liquid diet, and the use of an alkali, the symptoms abated, and in three weeks the patient was discharged, although the jaundice continued and the liver was no smaller. The temperature never rose above 100° F.

A diagnosis of hypertrophic cirrhosis of the liver was made, which involved an unfavorable prognosis, and the patient was told to return when she found it necessary. Three months later she came back, and was under the care of Dr. Denny. She had become very weak, and was dizzy and forgetful, hardly remembering her previous stay in the hospital. Otherwise the symptoms were much the same as before — jaundice, large liver, headache, vomiting, and epigastric pain. The feet were numb, but she walked fairly. No ascites. Urine as before. Temperature 97°, pulse 108.

After a few days the appetite failed, micturition became involuntary. She was delirious, and died August 22d, after an illness of about seven months.

The autopsy was as follows:

Autopsy. Twenty hours after death; body medium-sized; abundant adipose development; marked lividity of face and dependent portions; rigor mortis present. Calvaria heavy and very dense. Sinuses contained a small amount of coagulated blood, as did also the vessels of the pia. Brain normal. Heart not much distended with blood, mitral valve admitting the tips of three fingers, tricuspid of five. Muscular substance of heart slightly fatty. Right lung œdematous throughout; left lung slightly œdematous. Spleen normal in size.

The liver extended one and a half inches below the ribs in front, and weighed six pounds four ounces. External surface smooth, with slightly greasy feeling. On section, it was firmer than normal, of a grayish, translucent appearance. Venous portions of acini marked, rather far apart, with grayish, translucent substance between.

Kidneys of usual size; capsule readily detached; surface smooth. On section, cortical portion somewhat opaque; pyramidal portion normal. Stomach and small intestines not unusual.

Large intestines very much distended with fæces. Vessels much injected. Mesenteric glands somewhat enlarged.

Diagnosis: œdema and congestion of lungs; slight fatty degeneration of heart; hypertrophic cirrhosis of liver, with slight fatty infiltration; cloudy swelling of kidneys; enlargement of mesenteric glands.

CASE II. Jennie Brennan, aged twenty-nine, married, a well-developed woman of medium size, entered the hospital April 7, 1886, in a delirious state. She had rheumatic fever four years ago, but had otherwise been healthy, and her family stated that she had not been given to excessive drink. For the last six months, however, she had suffered from debility, absence of menses, gastric derangement, and slight swelling of feet for two weeks. She had been in bed for the last six weeks, delirious a fortnight.

At the time of entrance the symptoms were very active delirium suggestive of alcoholism; slight jaundice; moderate fever; pulse 100; respiration 24. The lungs were normal, and there was a soft murmur over the præcordia. The urine was very high colored, specific gravity 1020, and contained a trace of albumen. The abdomen was tympanitic and distended, but there was no dropsy. Enlargement of the liver was not detected. The noisy condition of the patient made thorough examination somewhat difficult.

Soon after entrance she had a severe convulsion, followed by stupor, and she bit her tongue badly.

The usual remedies failed to procure sleep, delirium was constant, the condition became typhoidal, with increasing fever, parched lips and dry, brown tongue; jaundice was noticeable, and she died one week after admission about six months after the beginning of her illness.

[1] Read before the Suffolk District Medical Society, April 24, 1886.

Autopsy by Dr. Gannett. Brain and its membranes negative. Heart of usual size, flaccid, valves negative, hyperplasia of spleen. Kidneys, slight degree of œdema. Œsophagus, stomach and intestines negative.

Liver much enlarged, weighing seven pounds nine ounces. Edges rounded, showing in general a yellowish color. On section, acini fairly distinct. Central portions for the most part pale red; in other portions of a bright yellow. Peripheral portions of a pale opaque yellow. Lobules separated from each other by gray translucent network. Bile ducts pervious. Diagnosis: chronic interstitial hepatitis, with fatty infiltration.

The symptoms and pathological conditions observed in these two cases correspond almost typically with those which, in recent years, have been classed as hypertrophic cirrhosis in distinction from the ordinary contracting disease which produces the hob-nailed liver of drunkards. While the causation may be the same, the conspicuous absence of dropsy throughout with the presence of jaundice and a greatly enlarged liver and spleen, make quite a different type of disease from that which we usually see as cirrhosis.

The post-mortem appearances as described in published reports have not always held together as they should to establish a characteristic pathology, but the discrepancies have been mainly histological, which might easily arise in examinations at different stages of the liver disease. The principal morbid change consists in a great increase of bile ducts surrounded by fibrous, non-contracting tissue. The portal ramifications are not interfered with as in the ordinary cirrhotic liver; there is seldom venous obstruction; dropsy is rare. The liver may weigh six or eight pounds, quite double its usual size, and the spleen is more or less enlarged. In Case I splenic engorgement was very noticeable at an early period but was not found after death.

The subjects of this disease may be young, as in the cases reported above, not seemingly broken down by drink; whereas atrophic cirrhosis is a disease of slow production, not very common even in drunkards before the age of fifty years. Ascites then first directs attention to the malady, while in the hypertrophic form jaundice is an early sign, and delirium, convulsions and coma more frequently precede death, which is said to be caused by biliary poisoning.

Without entering too much at length into the histories of these cases, I wished to record them on account of their comparative rarity, which may be inferred from the fact that, with the exception of a case reported by Dr. Doe several years ago, no other similar cases have been verified at the City Hospital, I think, although the same symptoms have been noticed in one or two other patients who went away.

— An exchange speaks of a young physician, who has just established himself, and has very little practice, but who is noted for his braggadocio. One of the older physicians, meeting him on the street yesterday, asked him how he was coming on. "I've got more than I can attend to," was the boastful reply. "I had to get out of my bed five times last night." "Why don't you buy some insect powder?" asked the old doctor.

Reports of Societies.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

C. M. GREEN, M.D., SECRETARY.

MAY 8, 1886, the President, DR. A. D. SINCLAIR in the chair.

DR. F. MINOT reported a case of

EXTENSIVE PHLEBITIS AND PELVIC ABSCESS FOLLOWING ABORTION.[1]

DR. STRONG gave the following account of the patient before she entered the hospital:

The patient was between two and three months pregnant, and succeeded in the induction of abortion by the use of gin and ergot. The entire ovum came away; but the patient, supposing an afterbirth should also come away, made several attempts to remove what she supposed was the placenta, but what proved to be the posterior lip of the cervix: this she succeeded in nearly pulling off. At the end of a week the patient was doing well; but a few days later there was an attack of uterine pain and fever: phlegmasia came on, and the case was sent to the hospital. No abscess was recognized, although carefully looked for.

DR. MINOT, in reply to questions, said that the most noticeable features in the case, when the patient first entered hospital, were phlegmasia and a slough on the calf of the leg and heel. It seemed remarkable to him that there was so little pain or tenderness in the abdomen. In regard to the use of antipyrine, he thought it gave comfort to the patient in many different classes of cases. He regulated the dose according to the temperature, giving 20 to 30 grains when the temperature was high. He had found the drug of great value in the hectic fever of consumptives: in such cases he gave smaller doses, because the temperature was not high; perhaps eight grains in the afternoon, about an hour before the time of febrile exacerbation. He had never seen any depression following the use of the drug, although it sometimes caused sweating and vomiting.

DR. LYMAN thought it strange that in so large a proportion of cases the phlebitis occurred on the left side. He believed in the use of small doses of antipyrine, enough to bring the temperature down to what might be called the temperature of the disease, and not to the normal point: he thought the exhibition of large doses was followed by too much depression.

DR. E. M. BUCKINGHAM reported, by invitation, the following case of

POSSIBLE AIR-EMBOLISM AFTER LABOR, WITH RECOVERY.

A lady of twenty-seven was delivered of her first child by forceps, after a tedious labor, and with the following circumstances:

The pains had been inefficient, and excepting that for a short time the anterior lip had been a source of annoyance by falling over the head, inefficiency of pains had seemed to be the only reason for the slowness of the labor.

She was etherized for operation and during etherization she vomited, but the mouth was wiped out and there was no choking, for which reasons, as well as for another which will appear later, it is perhaps fair to

[1] See page 279.

conclude that no obstruction was caused by vomited matter lodging in the air passages. Etherization was not very profound, not enough so, indeed, as was shown by a pain occurring as the head passed the perineum. Forceps were applied with the patient on her back across the bed, her legs being steadied by the nurse and the husband. Extraction of the child's body was hurried because the cord was wound tightly about its neck and was pulseless, and I was unable to loosen it. The uterus followed the child down. Unfortunately, the perineum was torn and it was sewn up with three sutures, as soon as the placenta had been removed. After this ergot was given and the patient was then placed in the ordinary position in bed. There had been no particular loss of blood, and the uterus did not dilate unless while I was at work on the perineum.

Almost immediately on changing position she began coughing continuously and with great violence, the face became livid, the pulse weak with 150 beats to the minute, the respiration rapid and laborious, and she cried out that she was faint, and asked if she were dying. Air could be heard entering both lungs. The heart sounds were weak but no murmur nor other abnormal sound was heard, although as no stethoscope was used and the patient was violently shaken by the cough, it is possible that such may have existed. Any attempt at altering her position from the back increased her distress, especially an attempt to turn her toward her left side. She was given fresh air, together with small, frequently repeated quantities of brandy and of coffee, and in all twenty drops of laudanum in divided doses. In two hours after the occurrence of these alarming symptoms she was coughing much less and said that she was somewhat easier. She was, however, still livid. The pulse was weak, but had fallen to 120, and the respirations were 60. Brandy and coffee were continued, with hot milk. Two hours later yet, Dr. Swan saw her with me. The number of respirations had sunk from 44 to 48 in the minute and the pulse was stronger. The second sound of the heart was weak even compared with the first. The abdomen was somewhat tympanitic and therefore the binder which had been applied was loosened. It was agreed to give digitalis, if the heart should fail. In the evening, some twelve hours after labor, color was improving, but no further change had occurred in pulse or respiration. Carefully moving the patient across the bed increased her distress.

On the following morning, February 15th, the pulse was 110, a gain of ten beats; respiration 36, a gain of eight to twelve breaths. She was now able to lie on the right side, but was not allowed to try the left. Tincture of digitalis was prescribed, ten drops every eight hours, in order to lessen the need for brandy, of which more than half a pint had been used. By the third morning the second sound of the heart was louder and had resumed its normal relation to the first sound, the number of pulse beats and respirations remaining, however, about the same. By the fourth morning the pulse was less than 100, and on the fifth day the number of respirations sank to 20. On the sixth day the patient was allowed to lie on the left side while I was present and suffered no inconvenience, she having then a pulse of 96, respiration 22.

The case went on improving steadily; but not until the fourteenth day was she allowed to sit up, although it caused no inconvenience at that time; she then had a pulse of 78 and respiration 16.

Dr. Minot had seen one quite similar case: it did not occur to him at the time that it was a case of air-embolism; but possibly it was.

Dr. J. S. Greene, present by invitation, said that some years ago he had studied the subject of air-embolism, and had made notes from time to time of reported cases. By his own reading and by the experiments of others, he was led to believe that there is a great variety of symptoms of air-embolism. Experiments have been made in which large quantities of air had been injected into the veins of animals; but there is no experiment to prove what symptoms may follow the introduction of small quantities of air clinically. The subject needs further study and elucidation: careful records should, therefore, be kept of all cases. When supposed air-bubbles are found in the veins *postmortem*, they should be examined chemically: such bubbles may sometimes prove to be not air, but the product of decomposition. It did not seem to him that Dr. Buckingham's case was one of air-embolism.

THE AMERICAN DERMATOLOGICAL ASSOCIATION.[1]

SCARLET-FEVER AND SCARLATINIFORM ERUPTIONS FOLLOWING INJURIES AND OPERATIONS,

by Dr. I. E. Atkinson, of Baltimore.

The speaker first referred to the literature of the subject referring to the cases on record. In many of these cases, it was held that the affection had been a true scarlatina. In other cases the scarlatiniform rash was of a septic origin. Various drugs which are frequently prescribed in traumatic cases will produce such eruptions, special reference being made to the cinchona alkaloids. The eruptions produced by these drugs are usually of an urticarial appearance, but they may be of scarlatiniform nature. The following conclusions were presented.

(1) Unprotected persons who have suffered injury or undergone operation are much more liable to scarlet fever than healthy individuals. This probably holds good with reference to other infectious diseases.

(2) When an epidemic tendency to these symptoms prevails after injuries and operations, it may be concluded that true scarlet fever is present.

(3) Septicæmia is occasionally accompanied with a scarlatiniform eruption.

(4) Medicinal eruptions, especially from cinchona alkaloids, may follow accidents and injuries.

DISCUSSION.

Dr. P. A. Morrow, of New York. The speaker has not mentioned the rash which often follows the use of antipyrine, which frequently simulates scarlatina although it is usually of a more measly character. Again, carbolic acid and iodoform dressings will often produce rashes presenting the objective appearances of scarlet fever. There is another eruption known as the "doctor's rash," which appears upon the persons of sensitive individuals stripped for examination. I have seen this in several cases, in one of which it was very marked.

Dr. L. N. Denslow, of St. Paul. I recall the case of a young woman who stated that a scarlatinous eruption always appeared upon her body on exposure

[1] Concluded from page 262.

to sunlight. In order to test the matter, she was directed to come to the hospital closely veiled and gloved. She was then placed in a dark room and one glove removed. A ray of sun-light was then allowed to fall upon the hand and at once a strip of erythema appeared. The same occurred on the face when it was exposed.

DR. I. E. ATKINSON, of Baltimore. While I have seen the rash mentioned by Dr. Morrow, I did not consider them in my paper because I was specially interested in these scarlatiniform eruptions following traumatism and referred to medicinal eruptions only incidentally.

FRIDAY. — THIRD DAY.

MORNING SESSION.

DR. J. E. GRAHAM, of Toronto, Canada, exhibited the specimens from a case of ainhum.

The first paper was entitled

REMARKS AND QUERIES ON, AND AS TO THE RELATIVE FREQUENCY OF MOLES AND THEIR PATHOLOGICAL CHANGES ON THE HEAD AND FACE,

by DR. S. SHERWELL, of Brooklyn.

The history and etiology of this class of affections is very slightly referred to in works on dermatology, but the author's experience has led him to pay increased attention to these formations. In looking up the statistics of one of the institutions with which he is connected, he found that in a period of eighteen months he had seen forty-seven cases suffering with neoplastic and hypertrophic growths. In thirty-six of the cases the growths occupied the face and head. In only eleven cases were the growths found on the body and limbs. Seventeen of the cases in which the growths were on the face were classed as epithelioma. It might be urged that the exposure of the unclothed portions of the body would lead to the formation of neoplasms, and the occurrence of destructive activity in them. If that were so, why should not telangiectasic deformities, nævi, etc., undergo degeneration? The speaker had never seen malignant action, or what simulated it in such growths. Mechanical irritation of the parts might be considered one reason for the frequency of these growths and their malignant tissue alterations, but other parts of the body would seem more exposed to irritation than is the face. Moles and similar growths, while common on other parts of the body, as well as on the face, yet in other situations they seem less likely to undergo destructive pathological changes. The field electively most inimical to the presence of these growths and destructive activity in them, when already present, may be bounded thus: a quadrangle, just taking in the lower lip, the corners of the mouth, extending back to the ears on both sides, vertical lines extending upwards to about an inch above the supra-orbital ridge, united by another horizontal line. Of the space thus included, the vicinity of the eyelids and bridge of the nose was, in the author's experience, the most usual seat of these growths.

The most rational explanation for the frequency of these growths in the situations described is the nature and abundance of the circulatory nutrition, which must favor hyperplasia. If, however, we accept the above hypothesis, why should these errors of the capillary system, such as nævi, not oftener degenerate? He had frequently operated on these latter deformities, often causing much irritation, but has never seen more than a slight keloid change result. The speaker then referred to the special danger of malignant degeneration which attended the presence of moles in persons of advanced life.

In regard to treatment, he stated that he had operated on these growths in many ways, and had come to the conclusion that when malignant action is either present or suspected, the combination of Volkman's curette, followed by the potential cautery, is the most efficient and easiest method of treatment. Of all escharotics, he preferred the liquor hydrargyri nitratis.

DISCUSSION.

DR. I. E. ATKINSON, of Baltimore. The probable explanation of the frequency of moles, etc., upon the face, as compared with other portions of the body, is that, when in this situation patients seek relief, while when covered with clothing attention is not attracted to them. We should expect that sebaceous new growths would be more commonly seen upon the face, because there we have the greatest activity of the sebaceous apparatus.

DR. JAMES C. WHITE, of Boston. I think with Dr. Atkinson, that these new formations referred to are not more frequent on the face than on other portions of the body. That they undergo degeneration and form epitheliomatous new formation on the face more frequently than on other parts of the body, I think cannot be doubted. In regard to the possibility of angiomatous formations undergoing degenerative processes, I have never seen them undergo the so-called malignant change, but they do undergo degenerative processes tending to a spontaneous cure.

I formerly used the liquor hydrargyri nitratis to a large extent, but within recent years I have used the concentrated nitric acid, and seem to obtain about the same effect.

DR. E. B. BRONSON, of New York. I think that in the cases of syphilitic growths, the mercurial preparation is more active than the pure nitric acid, and tends to promote more rapid absorption.

DR. L. N. DENSLOW, of St. Paul. With reference to the caustic, I may say that for the past year I have used a solution of one drachm of bichloride of mercury in one ounce of traumatacine. Its application is not painful at first, and does not excite inflammation for some time. It is particularly useful in the case of children.

DR. R. W. TAYLOR, of New York. The author is to be congratulated upon the clear manner in which he has called attention to the danger of these various growths upon the face in a person over forty-five years of age. Such growths are very prone to assume malignant action. In the same connection, it may be remarked that any inflammatory mass about the prepuce, particularly if the result of anterior lesion, should, in old persons, always be ablated.

NOTES OF A CASE OF EXFOLIATIVE DERMATITIS (PITYRIASIS RUBRA (?)), WITH BULLOUS LESIONS,

by DR. W. A. HARDAWAY, of St. Louis.

February 21, 1886, the author was called to see Mrs. X., with an annoying disease of the skin. The patient was forty-five years of age, stout, and somewhat nervous. She had always been healthy. The present disease came on February 1st, after a night of fatigue and exposure to the night air. The following day a red patch appeared on the pit of the

stomach. Others developed, soon running together, leaving no healthy skin between. There was very little scaling at first, and no moisture. There was some degree of pruritus. When seen by the author, the chest, arms, back, and thighs presented the usual appearances of pityriasis rubra. There was neither moisture, crusts, nor appreciable infiltration. The skin was shining, and of a violaceous hue. In the morning a handful of scales could be gathered from the sheet, but they were not as large as is usual, and were inclined to be furfuraceous. The face was not involved. Three or four days after the first visit, there appeared upon the thighs, abdomen, and buttocks, a number of tense bullæ. Their appearance was preceded by a distinct chill, and followed by a moderate elevation of temperature. The blisters did not run into each other. The bullæ appeared in successive crops of not more than a dozen, each crop being preceded by a chill. Quinine was freely administered, and at the end of a week the bullæ ceased to appear. Dr. Hardaway was obliged to discontinue his visits at this period of the case, but the patient gradually improved.

The writer thought that this and other cases which he had seen showed that diseases usually supposed to run a dry course may, under certain circumstances, be complicated with lesions containing fluid.

A CASE OF PROBABLE TUBERCULOSIS OF THE SKIN,

by DR. G. H. TILDEN, of Boston, Mass.

The patient, a healthy-looking boy of two years of age was first seen in July, 1885. The only lesions were six or eight cutaneous lesions scattered over various parts of the body. These were about the size of a split-pea, slightly elevated above the level of the skin of a bright red color, which disappeared entirely on pressure. These nodules were hard to the touch, with borders of sensible infiltration. These lesions had appeared within the previous five months and had been very slow in growth. During the previous three months there had been failure in appetite and strength and the child exhibited an indisposition to walk. He was under observation for three months during which time one or two fresh nodules appeared. In nearly all of the older ones, there ensued softening with formation of pus which discharged and was followed by cicatrization. About two weeks after the first visit a fluctuating swelling of the size of a hen's egg made its appearance on the inner side of the left thigh over the knee-joint, but not communicating with it. This was opened and pus discharged. It healed in a week. The general health became visibly affected. In November there appeared in the left buttock a swelling which gave an obscure sense of fluctuation. In the proximal phalanx of one finger there appeared a pyriform enlargement resembling that seen in dactylitis syphilitica. The child was again seen in February. The swelling in the buttock had increased in size and there was more fluctuation in it. There was at this time, sufficient outward curvature of the lumbar vertebræ to justify a diagnosis of Pott's disease. In his remarks with reference to the case, the speaker said that in the outset the diagnosis of the nature of the cutaneous lesion had been impossible, but from the subsequent course of the disease he thought the most probable diagnosis to be tuberculosis of an unusual form. In arriving at a conclusion, the following affections were considered: furunculus, erythema nodosum, sarcoma, and syphilis.

DR. LE GRAND N. DENSLOW, of St. Paul, made a supplementary report with reference to

THE TREATMENT OF ACNE BY THE USE OF SOUNDS.

At the last meeting he had reported five cases in which this plan of treatment had been of value. Four of these cases were adults, and all had remained well. The fifth case was that of a boy about fourteen years of age, and in this case relapse had occurred.

DR. S. SHERWELL, of Brooklyn. I have treated cases of acne with the use of sounds and I believe that it does good. I employ this method as an adjunct to other treatment. I of course do not use it in all cases.

A communication with reference to the organization of a Congress of American Physicians and Surgeons was received and the following committee of conference, to report at the next annual meeting of the Association, was appointed: Drs. H. G. Piffard, of New York; F. B. Greenough, of Boston; R. B. Morison, of Baltimore; G. H. Tilden, of Boston, and LeGrand N. Denslow, of St. Paul.

The following officers were elected:

President, Dr. H. G. Piffard, of New York.

Vice-Presidents, Dr. F. B. Greenough, of Boston; Dr. R. B. Morison, of Baltimore.

Secretary, Dr. G. H. Tilden, of Boston.

Treasurer, Dr. LeGrand N. Denslow, of St. Paul.

The Association then adjourned to meet at the call of the Council.

Recent Literature.

A Manual of Surgery. In Treatises by various authors. In three volumes. Edited by FREDERICK TREVIS, F.R.C.S., Surgeon to, and Lecturer on Anatomy at the London Hospital. Vol. I. General surgical affections; the bloodvessels, the nerves, the skin. Vol. II. The thorax, the organs of digestion, the genito-urinary organs. Vol. III. The organs of locomotion and of special sense; the respiratory passages, the head, the spine. Duodecimos. 1866 pp. 213 engravings. Per volume, cloth, $2.00. Philadelphia: Lea Brothers & Co. 1886.

The work appearing under the above title is the production of thirty-three writers, including the editor, many of whom are recognized authorities in their especial subjects.

It is published in the compact, neat form which characterizes the manuals of this series, each volume containing about six hundred pages, systematically arranged and conveniently indexed. Also in each is a list of contributors, table of contents, and separate index of subjects, to which is added, in Volume III, a general subject index of the whole work.

Each article is headed with the name of its author, and heavy-type headings render easily intelligible to the reader its plan of subdivision and classification. The work aims to be an epitome of the leading facts and principles of modern surgery included under the clinical history of surgical affections, their diagnosis and treatment.

Brevity is everywhere a striking feature of the work. Theories are conspicuous by their absence, and only those (as a rule) which have stood the test of experi-

ence are even alluded to, except to be declared worthless. Pathology is introduced only so far as it directly affects the clinical history and intelligent treatment of the affection described.

The general principles of operative surgery are concisely stated, but the technical details of special operations, except such as are atypical, for example, gastrotomy, nephrectomy, *et alii* are intentionally omitted. This is somewhat disappointing, since more attention to this department would have added much to the value of the work. A knowledge of the best methods for typical operations is far more frequently required than of those strictly atypical, especially in a manual designed for the use of students or practitioners — to be used by the former to prepare for general surgical practice, and by the latter as a book for rapid reference when in doubt as to the special operative treatment in any particular case.

In regard to atypical operations also, a more detailed description would, in some instances, add greatly to the value of the article; for example, the description of intestinal resection; no mention is made of the form of needle best fitted for suturing the intestine.

In some instances, an operation is alluded to without any attempt to describe it; for example, thyroidectomy. The different articles are, however, all well written, some exceedingly so, and any omission is perhaps due to the limited space allotted the author. The contents of the different volumes is stated by the above titles, and the few criticisms to be made are chiefly regarding minor details, which will probably be altered in a subsequent edition.

The article on tumors would be greatly increased in value by the addition of illustrations, for in no department of medicine is their assistance better appreciated than in that of pathological histology, and the excellent figures and diagrams in other parts of the work make their absence here the more conspicuous.

In the article entitled "General Principles of Operative Surgery" — an interesting and valuable one — it is to be regretted that this very important subject is so concisely handled. Apparently the great influence in operative surgery of certain pathological conditions, for example, chronic parenchymatous nephritis, entitles them to a much less abridged notice.

Volume III is especially well written, and contains, in an epitomized form, the latest views, both clinical and operative, in those branches of surgery, in which within a comparatively brief period such rapid important changes have occurred. The intestinal suture described on page 266 of this volume is usually credited to Gussenbauer, not Gegenbauer.

The articles throughout the entire work contain data of value, especially to a practitioner who has not time to read an extensive monograph, while some of the subjects are written in a manner which makes them almost ideal articles of reference.

The editor and his colleagues are to be congratulated on the successful result of their efforts, and the work they have produced justly deserves the high commendations with which it has been received.

— The number of students in the Imperial University at Tokio is said, by the *Medical Record*, to be nearly one thousand, a large proportion of whom are students of medicine. Five of the professors in the medical faculty are Germans.

Medical and Surgical Journal.

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RECENT VIEWS ON "RAILWAY SPINE."

A BRIEF report upon Duménil and Petel's investigations on spinal concussion was given last year [1] in the JOURNAL, but since then the subject has been discussed at considerable length, and the theory that the symptoms observed in such cases are simply manifestations of a traumatic hysteria has been vigorously attacked. Thomsen and Oppenheim, in a discussion of anæsthesia in general,[2] before Duménil's paper appeared, assert that hysterical anæsthesia is so capricious in its onset, its oscillations, and its disappearance, that a stationary condition of the disturbances of cutaneous and special sensibility, lasting for a long time, is extremely rare. After speaking of several diseases where anæsthesia is a symptom, they report a number of cases of injury to the head and of "concussion;" and, after quoting the well-known conclusions of Walton and Putnam, they assert, basing their statements on their own cases, that the discovery of anæsthesia or hemianæsthesia, with an implication of the special senses, does not suffice for a diagnosis of hysteria, since this symptom may be found in other functional and organic diseases of the central nervous system. In these cases the course is stable, and exhibits none of the changes characteristic of hysteria, especially the sudden improvements; the prognosis for recovery, too, is unfavorable. The mental condition is not like that of hysteria, but there is often a constant condition of melancholia. Besides that, there are sometimes symptoms pointing to severe and irreparable disease of the nervous system — Argyll-Robertson pupils, optic atrophy, genuine epilepsy, vesical paralysis, and progressive paralysis of the extremities. A part of the symptoms may be functional, but the whole disease is not necessarily functional, and functional and hysteria are not synonymous terms.

Page, in a fresh consideration of the subject,[3] considers the trouble a mixed one. There is first a sprain,

[1] Vol. CXIII, p. 296.

[2] H. Thomsen and H. Oppenheim. Ueber das Verkommen und die Bedeutung der sensorischen Anästhesie bei Erkrankungen des centralen Nervensystems. Archiv. für Psychiatrie, xv., 2, 3, pp. 559, 633, 1884.

[3] H. W. Page. On the Abuse of Bromide of Potassium in the Treatment of Traumatic Neurasthenia. Medical Times and Gazette, April 4, 1885.

which, by causing pain and stiffness in the back, may direct attention to the spine. In addition to that, the accident produces a severe mental effect, so that, even without any injury, there may be collapse. This is followed by headache, pains, weakness, prostration, and fatigue on exertion. The patient becomes nervous, weak, emotional, melancholy. There is a lowered nerve force, neurasthenia. This may be attended with functional "hysterical" disorders, anæsthesia, paralysis, catalepsy, and trance. The neurotic suffer most. All these cases tend to recover, but recovery may not be complete in severe forms, and various causes — melancholia, the prospect of damages, and the improper use of bromide of potassium — may delay it.

Charcot[4] attacks the conclusions of Thomsen and Oppenheim with great earnestness, and defends the theory of the hysterical nature of the affection. He affirms that these grave and obstinate nervous states, rendering work impossible for months or years, are only hysteria, nothing but hysteria. In the female, the symptoms of hysteria are usually unstable, although they may be tenacious, but in the male they are often fixed and tenacious, and resist treatment. Melancholia is not uncommon in the male. This permanence prevents their recognition. Charcot cites cases in "La Salpètrière," among them a case of right hemianæsthesia with a classical limitation of the field of vision, where the symptoms had been observed for twenty years without even a temporary modification. Hystero-epileptic attacks have been observed in some of the traumatic cases, but in others they may fail, and we may find only the permanent stigmata of hysteria, anæsthesia, contractures, etc.

In a recent paper devoted exclusively to this trouble, Oppenheim reports ten new cases and defends his former position.[5] It is difficult to say how far the mental shock plays a part in the ætiology, but all the patients exhibited some mental alteration, melancholia, emotional disturbance, terror or sleeplessness. There was, however, no disturbance of the intelligence. Vertigo and faintness were not uncommon, and one suffered from genuine epileptic attacks, while another had petit mal, and another had attacks of confusion with hallucinations, the psychical equivalent of epilepsy. Headache, pressure in the head, vertigo, tinnitus, and loss of sexual power were also observed. There was usually anæsthesia, including anæsthesia of the special senses, but true hemianæsthesia was rare; if one-half of the body was markedly affected, however, the other half was found to be less sensitive than normal. Bilateral symmetrical anæsthesia was also seen. Limitation of the visual field may or may not be present. In many cases the mobility of the legs was impaired, and the patients were very cautious about jarring the vertebral column. The gait was slow and straddling, and they sometimes staggered with the eyes shut. Tremor and hemiparesis were also noted. Some patients had much difficulty in micturition, one having to use the catheter; others suffered from constipation. Two patients had some optic atrophy, a third Argyll-Robertson pupils with inequality. These symptoms Oppenheim claims differ from those in the cases reported by Charcot, and he asserts that Charcot is enlarging the already vague boundaries of hysteria by admitting permanent states of depression among its symptoms. Autopsies are lacking; but in two of his cases a portion of the nervous system, the optic nerve, showed visible morbid changes. If this is a symptom of hysteria, he says, then the firmest pillars of our knowledge are overturned. Although epilepsy in various forms was seen, hystero-epilepsy with its grand movements, *arc du cercle*, was absent. He repeats his former statement that anæsthesia with implication of the functions of special sense is not characteristic of hysteria. Other symptoms observed, too, are not common in hysteria: obstinate headache, vertigo, vomiting, motor disturbances, loss of virility, disturbances in micturition, and the girdle-feeling, beside Argyll-Robertson pupils and optic atrophy. He concludes that the symptoms developing after railway injuries, etc., do not present a single uniform type, that in many cases they do not agree with any one form of disease, that some cases are a mixed form of psychosis and neurosis, while a large percentage indicate definitely a lingering organic disease of the nervous system. He reasserts, too, that a functional nervous disease is not necessarily hysteria. The prognosis, of course, is often very important. He differs from Page, who thinks that most cases finally recover, and states that he has never seen perfect recovery.

Westphal, who some years ago advanced the hypothesis of little foci of myelitis or encephalitis, or foci of multiple sclerosis as a cause for these troubles, has recently stated[6] that he sees no reason for bringing such cases under the rubric of hysteria.

Not even Oppenheim would venture to deny that grand hysteria or neurasthenia may be caused by injury, especially by such injuries as railway accidents. The cases reported by Charcot, Page, Putnam and Walton seem to have established this fact beyond question. It is a different matter, however, when the claim is made that the majority of cases of "railway spine" are hysteria. It would be difficult to make the cases reported by Oppenheim fit any definition of hysteria as we ordinarily recognize it, and, in fact, the evidence of organic change in the nervous system in some of his cases seems conclusive. We shall probably have to admit that several different affections, some functional and some organic, may result from railway injuries, although at present our knowledge is too uncertain to make a correct classification. Above all, autopsies, with a careful examination of the nervous system, are essential.

[4] J. M. Charcot. Apropos de six cas d'hysterie chez l'homme. Le Progrès Médical, Nos. 18, 23, 32, 1885.

[5] H. Oppenheim. Weitere Mittheilungen über die sich an Kopfverletzungen und Erschütterungen (in specie: Eisenbahnunfälle) anschliessenden Erkrankungen des Nervensystems. Archiv fur Psychiatrie. xvi. 3, p. 743, 1885.

[6] Archiv fur Psychiatrie, xvii, 1, p. 282, 1886.

THE INDEX-CATALOGUE. VOLUME SEVEN.

THE seventh volume of the Index-Catalogue of the Library of the Surgeon-General's office, completes the index through Leghorn and thereby gives the student of medical literature control over certain very important subjects: the intestines, the jaw, the joints, the kidneys, the knee-joint, labor, the larynx, etc. The Index with its present issue comprises 70,500 book titles and 254,000 journal articles. There is prefixed to this seventh volume a consolidated list of all the abbreviations used in the first seven volumes of the catalogue, which has been prepared to obviate the necessity of consulting in some cases, several volumes in order to determine the precise scope of a given abbreviation. It would almost seem as though the fact that this volume contained such a list might properly have been noted on the cover. "The additions to the abbreviations of titles published in each volume have become so numerous as to make a consolidation necessary for the convenience of the reader," but only those on intimate terms with the great index will know of the existence of this perfected list, or be able to remember the volume which contains it. It is, however, pretty certain that a supplemental list will again be necessary before the Index is completed. There will be required six or seven more volumes which will at the present rate require as many years for publication. During that time there are sure to appear a certain number of new periodicals, undoubtedly their number could be pretty accurately foretold by comparison with the past, and the new publications must be represented by their appropriate abbreviations.

A very little use of the Index makes evident the very great care that has been bestowed upon it, in order that it may reach the highest possible degree of usefulness. The long lists of titles under important heads are carefully subdivided so that one is able to refer at once to the minute portion of the great subject in which he is interested. In the present volume, for instance, *Intestines* is divided into many subheads, *Abnormities and malformations of; Absorbtion by; Adhesions of; Animals, insects, etc., in;* and so on, the larger subheads being divided again and again, as *Intestine, (obstruction of); treatment of by abdominal section; by electricity;* and so forth.

One sometimes hears a regret expressed that our republican government cannot, or does not, give to scientific medicine the same encouragement that is afforded by some of the more autocratic governments of the old world, by the maintenance of professorships whose incumbents devote their lives to scientific research. It is a gratification to know that in a different way our own government is exerting an influence in raising the average of medical knowledge. The manner in which this is being effected by the government was very forcibly brought out by Dr. Billings in his recent address before the British Medical Association, and patriotic physicians may find cause to temper their regrets with the reflection that our government in its own way is doing an important work for the profession.

After speaking of the Army Medical Museum, Dr. Billings says of the library:

"The library, which commenced in a collection of those books relating solely or especially to military medicine or surgery, which were required in the compilation of the 'Medical and Surgical History of the War' has expanded into a great medical library which is one of the best practical working collections of the kind in the world. These collections then no longer appertain exclusively or chiefly to the business of one department, but belong to the whole profession of the United States as a body; and the department which has charge of them is managing them from this point of view. The influence of the library in stimulating research and upon the quality of medical literature is already very perceptible and is destined to increase with advancing years. I think I may also venture to claim that the utility of these collections and especially of the library is by no means confined to the medical profession of the United States, for the catalogues and indexes which are being issued in connection with them, are of service to medical writers and teachers all over the world."

This is by no means overestimating the valuable influence of the Surgeon-General's library, and of its index-catalogues. The latter has been a stimulus to other medical libraries in the preparation of their own particular catalogues, and has helped to keep alive that enthusiasm which makes the collection and preservation of books a pleasure and not a labor. The library of the Boston Medical Library Association is particularly rich in medical journals and its librarian has from the first taken pride in seeing its sets of valuable journals complete. It is hardly possible to estimate the value which has been added to the collection by the index to periodical literature which the index catalogue contains.

It is now comparatively easy to know all that has been written on any given subject, or rather all that is contained in the Surgeon-General's library which is about as near all as one library can ever contain, and of course the work of a man who desires to look up the literature of any given subject is comparatively lightened.

MEDICAL NOTES.

— The death of Dr. James G. Wakley, for twenty-five years editor of the *London Lancet*, occurred August 30th, from cancer of the tongue. He was the youngest son of Thomas Wakley, founder of the *Lancet*. Dr. James Wakley succeeded his father, on the latter's death in 1862, as editor of the paper. An older brother was associated with him as half-proprietor of that journal.

— Herr Paul v. Ritter, of Basle, has signified his intention of leaving 300,000 marks to the University of Jena, for the purpose of promoting the study of

philogenetic zoology according to the Darwinian theory. He will give 130,000 marks at once, and the balance will be paid after his death. Professor Haeckel, of Jena, an enthusiastic teacher of evolution, proposes to use the gift for the establishment of a professorship of zoology to be called, after the donor, the Paul v. Ritter Chair of Zoology.

— A serious and remarkable case of poisoning is reported in the British medical papers as having occurred at a wedding breakfast in Carlisle. In all, nineteen persons, partook of the meal. Four only escaped unharmed. One person, the bride herself, died on the fifth day. The dishes were all prepared by a professional cook the previous day, and kept in a dry, cold cellar. No peculiarity of taste was noticed, except a little bitterness of some of the jelly. The symptoms were much like those of cholera. They were peculiar in appearing late. The breakfast was at noon; some of the persons were taken ill at 8 P.M., others at midnight, some the following day, and one on the second day. The source of the poisoning is as yet wholly unknown. Metallic poisons seem to have been excluded, and some ptomaine has been suspected.

— In the discussion at the recent meeting of the British Medical Association at Brighton, on the duration of life with heart-disease, Dr. Bristowe made some very excellent and apposite observations on this subject. "It is," he said, "quite early enough, in my opinion, for a man to know that he has heart-disease when he begins to feel the effects of it;" and with this sententious remark most practitioners will agree. Incalculable harm has often been done by the abrupt announcement that a patient has cancer, or that another has heart-disease; and the evil is aggravated by the fact that, as in all other human affairs, the diagnosis may be wrong, or the prognosis may not be realized. Sir Andrew Clark told a very amusing but instructive anecdote of his having been called to see a gentleman suffering from bronchitis, who, fifty years before, had been precipitately superanuated on full salary, an the announcement by the medical officer to an insurance-company that he was the victim of an incurable form of heart-disease, and would probably not live more than six months.

— Toronto does not seem to be an encouraging place in which to practise medicine, according to the following paragraph, which has been going the rounds of the medical press, under quotation from the *Toronto Globe*: "There is only one medical man in this city who last year earned $5,000 from his profession, combined with the interest he received on his previous savings. There is not one man on the list who had $4,000, and only four who touched $3,000. When we come to the comparatively modest and moderate $2,000, we naturally conclude that we shall have a full legion. But no, we have only fourteen, all told, who came up to this figure. When we come to between $2,000 and $1,000, the number becomes encouragingly large. As many as fifty-one of the best-known and greatly-sought-after doctors of our city are put down under their own hands and seals as having last year lived on from $1,000 to $1,800. Some of these are professors. There remain only the unfortunates who worry along from $800 down almost to zero. Of these, we are sorry to say, there were last year thirty-six." How the exact figures were ascertained it does not appear, but we trust the amounts returned are not (as in some cases is to be suspected) an exaggeration over the reality. An accurate statement of professional incomes for any given locality, which are very difficult to obtain, would be of a good deal of interest to the resident profession.

NEW YORK.

— The Board of Health has decided to employ twelve physicians in vaccinating service for the next two months.

— The State Board of Health suffers a severe loss in the resignation of Dr. E. M. Moore, of Rochester, which has just been announced. Dr. Moore was one of its original members and has always been one of the valuable and active workers in its service.

— Dr. William W. Jackson, for the past ten years physician to the City Prison and medical examiner of the Department of Charities and Correction, died September 15th, at the age of fifty-six years. He had had a very large experience as an expert in insanity, and was highly esteemed both for his skill and many amiable qualities.

— Mr. Parrott, a reputable engineer, has undertaken to criticize the building of the proposed great Quaker Bridge dam for the formation of a storage reservoir, on the grounds both of inadequacy of supply and unhealthfulness. Notwithstanding the enormous proportions contemplated for it, he claims that it will not be sufficiently large to hold the surplus water of a wet year in a dry one. As to the question of unhealthfulness, he estimates that the artificial lake thus created will receive the entire drainage of about one-half the total area of three increasingly populous counties. This lake, according to his calculations, will have a border of seventy-eight miles' length, with flat and miry shores; so that when the water is level with the aqueduct opening there will be nearly 3,000 acres of "malarial mud" exposed to the summer sun, while the residue which the aqueduct cannot empty will constitute a pool of eight billion gallons stagnant from year to year. Whether Mr. Parrott's views are correct or not, the matter would seem to be worth thoroughly investigating before the building of the big dam is commenced.

The plan which he proposes in place of the one now contemplated, is to abandon the near-at-hand water-supply, and derive the supply from Ulster and Greene counties on the west shore of the Hudson where he finds an ideal drainage and storage territory. This will long be sparsely inhabited, and there are numbers of spots where brooks may be dammed within deep and rocky reservoirs; offering a strong contrast to the flat basin within the Quaker Bridge dam. The

various reservoirs could be connected by tunnels, and all, he thinks, could be drained into Esopus Creek, from whence the main supply could start for the city through a pipe line from an elevation of five hundred feet above tide level.

Miscellany.

FAREWELL DINNER TO DR. R. T. EDES.

A FAREWELL dinner was given to Dr. R. T. Edes at Young's Hotel, Boston, Friday evening, September 17th, prior to his departure for Washington where he intends to make his home and practise his profession.

About thirty of Dr. Edes's medical colleagues sat down at the table with him, the staff of the City Hospital, the Harvard Medical School and the Dorchester Medical Club being especially represented. Dr. Francis Minot presided, and addressed the guest of the evening on behalf of the Harvard Medical School; Dr. H. W. Williams spoke for the staff of the City Hospital; Dr. W. S. Everett for the Dorchester Medical Club, and short speeches were also made by Drs. Wigglesworth, Morton Prince, W. L, Richardson and George B. Shattuck. Sincere regret at Dr. Edes departure from Boston, and warm wishes for his future welfare and happiness were the common sentiments expressed by all. It is not given to every one to resign a hospital appointment and a Harvard professorship in the prime of life and excite thereby the real regret of younger as well as of older colleagues. The evening closed with the singing of "Auld Lang Syne," and was as enjoyable as the occasion for the gathering would allow it to be.

DILATATION OF THE STOMACH IN CHILDREN.

IN the *Archives of Pediatrics* for July, 1886, there is a review of an article on this subject by Blache from the *Rév. Mens. des Mal. de l'Enfance*, February, 1886. According to this author the condition is not a rare one among children, especially as the result of continued digestive troubles where there is alternation of diarrhœa and constipation. A number of such cases have been seen by the author in children between the ages of twelve and eighteen months, especially among those who have been fed from the bottle and have been fed too frequently. Less frequently the same condition occurs among children who have been nursed at the breast. In most of the author's cases there was a precedent condition of gastro-enteritis. Moncorvo, of Rio Janeiro, who has also written upon this subject, found that most of his cases originated from bad hygienic surroundings, from hereditary syphilis, or from malarial intoxication; but this experience did not occur to the author, the digestive and intestinal troubles, as already observed, being most prominent as causative influences. The stools in these cases are frequent, watery, and contain, more or less, half-digested food with an abundance of epithelium from the intestinal mucous membrane. They are discharged from the bowel in a stream or jet, and are accompanied by the passage of gas. They sometimes have a fetid odor and sometimes an acid one, or no odor at all. Their greenish color is a noticeable point, the color being due to a change from the natural brown or yellow by the action of the acid juices which convert a portion of the bile into biliverdine. They also contain a quantity of glairy mucus. All these indications point to an advanced condition of gastro-intestinal catarrh, and in nine times out of ten the author affirms that a dilated condition of the stomach will coexist. Thus, it is seen that a dilated condition of the stomach is only an attendant phenomenon of a local or diathetic diseased condition. The diagnosis of this condition is not thought to be a difficult matter, even though the præ-gastric walls do not project beyond the general level of the surface of the body. By placing the child upon the back and drawing up the knees a sound may be obtained by percussion, which is called a hydro-aërial sound, which indicates a dilated condition of the stomach. Of the consequences of this condition two at least are to be noted, one having reference to the heart and lungs, the other to the nervous system. As to the former, the author has noticed that in some children the excessive enlargement of the stomach is associated with dyspnœa and with cardiac palpitations; as to the latter, night-terrors have sometimes been associated. In addition to the excessive and improper feeding which may produce this condition the author also mentions as exciting causes, weaning, dentition, and bad hygienic surroundings. A tonic and reparative treatment is, of course indicated.

REFLEX NERVOUS PHENOMENA FROM INJURIES TO THE TESTICLE.

WE note the two following cases illustrating serious reflex symptoms following wounds of the testicle and the tunica vaginalis. The first occurred during the tapping of a hydrocele, and is described in the *Lancet*, July, 1886, p. 23. M. Loumeau tapped a hydrocele in a healthy man, aged forty-four, and drew off about one hundred and twenty-five grammes of clear fluid. The operator then injected gently sixty grammes of a mixture of tincture of iodine with twice its volume of water. All at once the patient complained of severe pain in the spermatic cord and loins, with cramp in the right forearm. The ulnar border of the right hand then became flexed, the ring and small fingers being completely bent, while the index and middle fingers became flexed at their metacarpo-phalangeal articulations. The thumb also was flexed and brought near the fingers. Exactly the same position was shortly afterwards assumed by the left hand. There were no convulsions nor syncope. After a few minutes the ulnar muscles began to relax, and the index and middle fingers became flexed completely on the hand, which itself became strongly flexed on the forearm. All the muscles on the front of the forearm became hard and contracted. The palmar fascia was strongly retracted, and the palmaris brevis quite tense. On both sides the ulnar affection had given place to contraction of the muscles supplied by the median nerve. The tongue hung loosely in the mouth, and the patient was unable to articulate a sound. The forearms were shampooed, and nearly an hour afterwards the muscles relaxed. The patient recovered completely, leaving the hospital cured, in a few days. The author had no idea of the cause of this attack, but attributed it to reflex irritation of the nerves of the serous membrane of the testicle.

The second case is one of sudden death from a blow on the testicles, and is reported in the *London Medical Record* (August 16) from the Bulgarian *Meditzinsko Spisanïë*, June 20, 1886. A man, aged between forty-five and fifty, fought with a woman on the street. During the fight the woman dealt a violent blow on his genital organs. The man shouted, "I am dying," staggered, and fell insensible. The author, Dr. Ivanoff, who was almost immediately fetched to the spot by a policeman, found the patient lying on his back, motionless, pulseless, and breathless, his face, neck, and scrotum being very red. Not a trace of ecchymosis or any other signs of injury was detected anywhere in the man. Since there seemed to be heard a slight cardiac murmur, and a slight tremor to be felt in the carotides, Dr. Ivanoff, without any delay, resorted to artificial respiration. But neither forty-five minutes' manipulations nor electrization could establish the man's breathing. The congested parts soon became livid, and every sign of life extinct. At the post-mortem examination, there were found only intense congestion of the meninges and brain, congestion of the lungs, with numerous punctiform ecchymoses, accumulation of dark-red fluid blood in the cardiac cavities, congestion of the stomach, liver, kidneys, and testicles. Everything else was quite normal. Basing his conclusions on all the facts, as sketched above, Dr. Ivanoff stated (forensically) that death followed from syncope, which had been brought about by sudden violent pain caused by a blow on the testicles.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 11, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	—	—	—	—	—	—	—
Philadelphia (Sept. 4)	971,363	372	141	20.90	11 73	12.58	6.29	2.29
Brooklyn	630,000	335	105	29.40	10.92	19.32	.28	4.48
Chicago	630,000	—	—	—	—	—	—	—
Boston	330,406	219	95	24.68	15.17	16.28	2.74	3.66
St. Louis	400,000	174	83	30.78	7.31	10.83	2.28	10.83
Baltimore	417,220	163	75	26.84	14.64	13.42	4.27	2.44
Cincinnati	325,000	106	46	24.84	12.22	10.34	1.88	10.34
New Orleans (Sept. 4)	238,000	94	30	23.44	10.64	10.64	1.06	2 12
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	115	46	10.44	9.57	6.09	3.48	.87
Pittsburgh	190,000	70	36	37.18	4.29	10.00	5.72	8.58
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	—	—	—	—	—	—	—
Charleston	60,145	70	34	8.58	10.00	2.86	1.43	—
Worcester	68,383	25	15	20.00	20.00	16.00	—	4.00
Lowell	64,051	33	14	48.48	6.06	27 27	15.15	3.03
Cambridge	59,960	26	10	26.95	3.85	23.10	—	3.85
Fall River	56,863	28	14	32.13	14.28	10.71	10.71	3.57
Lynn	45,861	20	3	10.00	15.00	—	5.00	—
Lawrence	38,825	6	1	—	—	—	—	—
Springfield	37,577	—	—	—	—	—	—	—
New Bedford	33,393	15	7	39.96	13.33	39.96	—	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	18	10	27.77	—	—	11.11	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	6	2	33.33	16.66	33.32	—	—
Taunton	25,674	9	6	33.33	22.22	22.22	11.11	—
Haverhill	21,795	10	5	30.00	20.00	30.00	—	—
Gloucester	21,713	9	6	22.22	11.11	11.11	—	11.11
Brockton	20,783	5	3	40.00	—	40,00	—	—
Newton	19,759	7	4	28.56	—	14.28	14.28	—
Malden	16,407	9	3	33.33	—	22.22	—	11.11
Fitchburg	15,375	11	5	18.18	—	—	—	9.09
Waltham	14,609	10	5	20.00	—	20.00	—	—
Newburyport	13,716	7	2	28.56	14.28	28.56	—	—
Northampton	12,896	4	3	50.00	20.00	50.00	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 1,896: under five years of age 909: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 517, consumption 215, lung diseases 78, diarrhœal diseases 283, diphtheria and croup 80, typhoid fever 45, malarial fever 32, whooping-cough 25, scarlet fever 16, cerebro-spinal meningitis seven, measles six, erysipelas three. From malarial fevers, New Orleans 11, St. Louis six, Baltimore five, Brooklyn four, Charleston three, Philadelphia two, District of Columbia one. From whooping-cough, Brooklyn nine, Pittsburgh six, Baltimore and District of Columbia four each, Lowell and Cambridge one each. From scarlet fever, St. Louis four, Brooklyn three, Baltimore. Cincinnati and Pittsburgh two each, Philadelphia, Fall River and Lynn one each. From cerebro-spinal meningitis, District of Columbia four, Fall River, Gloucester and Fitchburg one each. From measles, Brooklyn and Pittsburgh two each, Philadelphia and Salem one each. From erysipelas, St. Louis two, Brooklyn one.

In the 22 cities and greater towns of Massachusetts, with a population of 1,015,634 (population of the State 1,941,465), the total death-rate for the week was 23.61 against 20.51 and 22.88 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending August 28th the death-rate was 20.1. Deaths reported 3,497: infants under one year of age 1 233; acute diseases of the respiratory organs (London) 160, measles 57, scarlet fever 49, whooping-cough 48, fever 35, diphtheria 27, diarrhœa 562.

The death-rates ranged from 13.9 in Bristol to 26.8 in Preston; Birmingham 21.0; Blackburn 19 1; Hull 17.4; Leeds 21.2; Leicester 24.7; Liverpool 24.6; London 18.3; Manchester 23.7; Sheffield 22.0; Sunderland 18.4.

In Edinburgh 16.6; Glasgow 18.7; Dublin 18.2.

For the week ending August 28th, in the Swiss towns, there were 30 deaths from consumption, diarrhœal diseases 17, lung diseases 13, diptheria and croup one, whooping-cough seven.

The death-rates were: at Geneva 9.1; Zurich 11.5; Basle 19.2; Berne 21.4.

The meteorological record for week ending September 11, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Sept. 11, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday,... 5	30.372	62.5	65.8	58.4	90.0	83.0	84.0	85.7	N.E.	S.E.	S.	5	10	1	O.	O.	F.	—	—
Monday,... 6	30.371	67.1	70.4	61.9	84.0	83.0	95.0	87.3	N.W.	S.E.	W.	3	12	4	F.	F.	G.	—	—
Tuesday,.. 7	30.301	74.0	84.9	62.0	92.0	50.0	90.0	77.3	W.	W.	W.	6	12	12	O.	C.	F.	—	—
Wednes... 8	30.132	74.2	84.5	66.6	88.0	49.0	87.0	74.7	W.	S.W.	W.	12	20	16	C.	C.	F.	—	—
Thursday, 9	29.997	75.1	84.6	67.4	88.0	62.0	81.0	77.0	W.	S.W.	S.	11	14	6	C.	F.	O.	—	—
Friday, ...10	29.854	64.1	71.8	62.1	99.0	89.0	92.0	93.3	N.E.	N.E.	W.	8	6	4	R.	T.	O.	—	—
Saturday, .11	29.847	71.7	80.9	64.0	91.0	34.0	56.0	60.3	W.	N.W.	N.W.	11	15	8	O.	C.	C.	10.30	0.21
Mean, the Week.	30.125	69.8	77.3	63.2				79.4											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 4, 1886, TO SEPTEMBER 17, 1886.

MIDDLETON, P., major and surgeon. Assigned to duty at St. Francis Barracks, St. Augustine, Fla., as post-surgeon. S. O. 126, Division of the Atlantic, September 2, 1886.

LA GARDE, L. A., captain and assistant surgeon. Upon departure of 3d Infantry from Fort Ellis, M. T., to proceed to Camp Sheridan, Mammoth Hot Springs, Wyo. Ter., and report to the commanding officer for duty, relieving Assistant Surgeon Pilcher. S. O. 87, Department of Dakota, August 27, 1886.

WAKEMAN, WM. J., first lieutenant and assistant surgeon. Granted leave of absence for one month, with permission to apply for three month's extension, to take effect when his services can be spared in the Department of the Platte. S. O. 207, A. G. O., September 6, 1886.

PILCHER, JAMES E., first lieutenant and assistant surgeon. When relieved by Assistant Surgeon La Garde from duty at Camp Sheridan, to return to his proper station, Fort Custer, M. T. S. O. 87, Department of Dakota, August 27, 1886.

WALES, PHILIP G., first lieutenant and assistant surgeon. Granted leave of absence for one month with permission to apply for an extension to November 5, 1886. S. O. 70, Division of the Pacific, August 31, 1886.

BANISTER, WM. B., first lieutenant and assistant surgeon, (recently appointed). To report by letter to the commanding general, Department of Arizona, for assignment to duty. S. O. 208, A. G. O., September 7, 1886.

WALKER, F. V., first lieutenant and assistant surgeon. Assigned to temporary duty at Fort Adams, R.I. S. O. 131, Division of the Atlantic, September 8, 1886.

WALES, PHILIP G., first lieutenant and assistant surgeon. Resignation accepted by the President, to take effect November 5, 1886. S. O. 212, A. G. O., September 11, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING SEPTEMBER 18, 1886.

SIMONS, M. H., passed assistant surgeon. Detached from the "Alert," and placed on waiting orders.

NORFLEET, E., passed assistant surgeon. Detached from the "Alert" and placed on waiting orders.

BOGERT, E. S., medical inspector. Ordered to Navy Yard, New York, September 28, 1886.

RESOLUTIONS IN MEMORY OF CHARLES D. HOMANS, M.D.

The Surgeons of the Massachusetts Charitable Eye and Ear Infirmary have heard with profound sorrow of the death of Dr. Charles D. Homans, the President of the Board of Trustees of the Infirmary.

They wish publicly to express their high esteem for his character and their sense of the void his death leaves, both in the profession and in the community.

They recall with pleasure his genial and manly presence, his skill as a physician, his manner courteous and kindly to all, his years of gratuitous service in the relief of the sick and suffering, and with deep feeling regret that a life which promised years of continued usefulness should now be brought to a close, and they would herewith tender to the family and friends a sincere and heartful sympathy in their affliction.

(Signed.)

G. HAY,
HASKET DERBY,
HENRY L. SHAW,
F. P. SPRAGUE,
B. JOY JEFFRIES,
ROBERT WILLARD,
CLARENCE J. BLAKE,
CHARLES H. WILLIAMS.

DEATH.

Died at Wollaston, Mass., September 13, 1886, John Lang Bennett, M.D., M.M.S.S., aged thirty-five years.

BOOKS AND PAMPHLETS RECEIVED.

Report of the President of the Board of Health to the Legislative Assembly of 1886. Honolulu, H. I. 1886.

Leprosy. Report of the President of the Board of Health to the Legislative Assembly of 1886. Also an Appendix to the same. Honolulu, H. I. 1886.

Fourth Annual Announcement of the Northwestern Ohio Medical College, Toledo, Ohio. Session of 1886–87. Toledo, 1886.

Proceedings of the Association for the Advancement of Physical Education, at its Organization at Brooklyn, N. Y., November 27, 1885. Brooklyn, 1885.

Transactions of the Louisiana State Medical Society at its Eighth Annual Session held at New Iberia, La., April 14, 15 and 16, 1886. New Orleans, 1886.

Intubation of the Larynx as a Substitute for Tracheotomy in the Treatment of Pseudo-Membranous Laryngitis; with a Report of Eighty-Three Cases. By F. E. Waxham, M.D., Professor of Diseases of Children, College of Physicians and Surgeons.

The Non-Identity of Croupous Tonsillitis with Diphtheria. By L. Emmett Holt, A.M., M.D., Instructor in the New York Polyclinic. (Reprint.)

Transactions of the Obstetrical Society of London. Vol. XXVIII. For the Year 1886. Part III for May, June and July. London: Published by the Society. 1886.

Führer durch das Medicinische Berlin. Nach authentischen Quellen bearbeitet. Mit 7 Grundrissen und 1 Plan. Berlin, 1886. Fischer's Medininische Buchhandlung.

A Treatise on Electrolysis and its Applications to Therapeutical and Surgical Treatment in Disease. By Robert Amory, A.M., M.D. (Harvard.) New York: Wm. Wood & Co. 1886.

Ein Fall von Divulsion der Harnröhre bei einer hochgradigen mit Harnverhaltung verbundenen Urethralstrictur. Von Dr. Leopold Casper. Berlin. (Separat-Abdr. aus Berliner klin. Wochenschr., 1886, No. 30.)

Surgical Lesions of the Brain and its Envelopes. A Lecture delivered at the College of Physicians and Surgeons, Chicago, Ill. By Nicholas Senn, M.D., of Milwaukee, Professor of Principles and Practice of Surgery and of Clinical Surgery in the College. (Reprint.)

Leprosy in Hawaii. Extracts from Reports of Presidents of the Board of Health, Government Physicians and others, and from Official Records, in Regard to Leprosy before and after the Passage of the "Act to Prevent the Spread of Leprosy," Approved January 3, 1865. The Laws and Regulations in Regard to Leprosy in the Hawaiian Kingdom. Honolulu, H. I. 1886.

Original Articles.

BERIBERI IN BRAZIL.

BY HORACE M. LANE, M.D., OF SAO PAULO, BRAZIL.

Having occasion to visit all of the principal cities of Brazil twice during the past year, I embraced the opportunity to collect such facts as were accessible concerning this strange disease, which, of late, seems to have embraced the whole Atlantic coast of Brazil from 5° north of the equator to 28° south. We have no assurance that it may not yet invade our Gulf coast, where there is a considerable strip of country within the limits ascribed to it, and where conditions apparently favorable to its development exist.

I was shown every courtesy by resident physicians of public or private hospitals, and officials in charge of penal institutions. It was, however, extremely difficult to get statistics of mortality of beriberi, or the extent to which it prevailed; the epidemic was always just in advance, and I never came up with it. There exists a great deal of confusion in the minds of many physicians as to exactly what constitutes a case of beriberi, but in some places, as was observed in the early days of the disease in India, there is a tendency to call every fatal disease of debility or obscure case of dropsy or paralysis, beriberi, so that it is impossible to reconcile statements made concerning it at different points on the coast. I have, therefore, shaken together the results of all of the observations made in upwards of one hundred cases, at Para, Maranham, Pernambuco, Bahia, and Rio de Janeiro, and endeavored to give a fair general view.

It is by no means as new in South America as is generally supposed. The first recorded observation of the disease is found in an old Portuguese work of 1756 (1),[1] where it is described as seen in Maranham, in the first half of the last century. Nothing is heard of it for one hundred years or more, when it is again recognized in Bahia (1860). It is probable, however, that it existed in Maranham and the neighborhood from the time of its first settlement, unrecognized, and treated as rheumatism, scurvy, or some of the ordinary medullary and cardio-hepatic diseases. It is also certain that it existed in Bahia many years before the epidemic of 1863 (2). At this time, however, it attracted the attention of observing physicians of the place, among whom were Drs. Patterson, Wurcheron, and Silva Lima, the latter writing and publishing, in 1872 (3), an elaborate description of its clinical features, based upon one hundred and twelve cases, and a review of the literature of the subject, making it clear that the disease was the veritable beriberi of India. It is to be regretted that this eminent clinician has not revised his work of fifteen years ago, and given to the profession the results of his later observations and riper experience, and of the extensive pathological research he is known to have made during this time. With his unrivalled opportunities and his acknowledged ability, no one could make a more valuable contribution to the literature of this obscure subject.

The geographical limits of the disease are now enlarged to include various points of India, the Malabar coast, part of Ceylon, Java, a limited area in Africa, China, and the coast of Bengal, Borneo, Cuba, Paraguay, and Brazil. It has a remarkable tendency to select certain strips of coast, leaving others in the same latitude, and apparently in the same condition untouched. Thus it is found in Java, while at Baly (Clapham), separated only by a narrow strait, it is unknown. In Cuba it has never been recognized out of Cardenas. It occupies the whole coast north of Madras (Lat. 13° 6′ N.), but is never seen south of it (Aitken). It is found only on the west side of the Bay of Bengal, from 15° to 20° N. Lat. In India it never extends more than forty (4) to sixty miles from the coast (Morehead), while in South America it has been seen in Matto Grosso (Araujo Braga), five hundred miles from the coast, and fifteen hundred miles up the Amazon (Herndon), and in São Paulo, at an elevation of nearly three thousand feet (Bertoldi), and in Bolivia, on the Atlantic slope of the Andes. It has been seen as far north as 40° Lat., and as far south as the 28th parallel, though it may be said to be limited to about 25° either side of the Equator. It is a singular fact that the disease has not yet been found in the West Indies, except at Cardenas, in Cuba, nor on the west coast of Africa, nor north coast of South America, nor in any part of Central America or Mexico, or the United States (5).

The very name is suggestive of something foreign, and we are prepared to learn that it is of Indian origin. Its etymology is obscure. It is probably from the Singhalese word *beri*, meaning weakness, inability — equivalent to our generic term *disease*. The repetition is common in the East to indicate intensity. It has also been said to come from the Hindoostanee word *bheri*, a sheep, from the resemblance of the doubling gait of the beriberic patient to the walk of a sheep. Others trace it to bhebheri, meaning numbness, rheumatism, a sore or swelling.

The word was found in use on the Malabar coast, where the disease was first discovered, and has been handed down by Anglo-Indian and Dutch medical writers, as a name for almost every fatal disease of debility, such as various kinds of paralysis, reflex paraphlegia, dropsy, anasarca, scurvy, anæmic rheumatism, various heart diseases, etc., known in the East. Later writers, however, have used it with greater precision. It is known in Japan as kake-kake (6); in Ceylon, as the bad-disease. The "Parangi" — which depopulated the "Vanni" district in Ceylon, and reduced it to a jungle, was probably *beriberi* (Evezard and Clapham). In Africa, it is the *sleeping sickness*. Authors speak of it as *Hydrops Asthmaticus, Indosynclonus, Synclonus-Beriberia*, etc., etc. So much for the name.

The disease, as found on the Brazilian coast, may be defined as "a constitutional disease, characterized by dropsy, paralysis, degeneration of muscular tissue, and progressive anæmia, whose chief features are numbness of surface, and hyperæsthesia of deep muscles of the extremities — gradual and incomplete ascending paralysis, both motor and sensory. Total absence of fever. Præcordial oppression, scanty and high-colored urine, hoarseness, and dusky discoloration of the skin, the fatal cases terminating by suffocation, asphyxia, or asthenia; favorable cases by an abundant flow of urine (Silva Lima), slow convalescence, and great tendency to relapse (Lacerda)."

Clinically, it may be divided into three forms: 1. The *paralytic*, dry, or atrophic form — *B. Atrophia* — where paralysis is the marked feature, and where there is a deficiency of fluids in the vessels, with, in rare cases, muscular atrophy. 2 The *œdematous* or wet

[1] These figures refer to the Bibliography at the close of the article.

form — *B. Hydrops* — in which there is a watery condition of the blood, with effusions into the cellular tissue and serous cavities. 3. The *mixed* — *B. Polysarcia* — where symptoms of either or both the other forms are found, with wide variations, and where the sharp lines of difference are lost.

There are two well-marked stages: the prodromic and the active. There is, in the first, a tired feeling, indisposition to move, weakness about the legs; in walking, a slight inclination of the toes to drag, obliging the patient to step higher than usual, inability to retain on the foot the heelless slipper usually worn by the poorer classes of Brazil; a drowsy feeling, and a sense of extreme shortness of breath on the slightest exertion, loss of appetite, and a sense of fullness at pit of the stomach; slight pains, generally attributed to rheumatism or neuralgia; numbness and tingling at tips of fingers, and of toes, around corners of mouth, and over anterior tibial muscles, a sensation around the waist as of a cord drawn tightly, with a knot over the epigastrium, and a slight pain at or beneath lower end of sternum. Up to this point, the symptoms are common to all forms of the disease. In the *paralytic* form, the patient now begins to feel anxious, the skin of the legs becomes dry and falls *asleep;* there is great sensitiveness, on pressure, about the deeper muscles of the calves of the legs, the belt gets tighter, and the knot over the epigastrium larger and harder, and distresses the patient fearfully, the tightness sometimes reaching up to the axilla, the dyspnœa becomes frightful, the face assumes a livid hue, the pulse becomes small and weak, the urine scanty and almost the color of coffee, the appetite lost; sometimes there are partial convulsions, clonic spasm of the muscles; patient complains that he is suffocating, is covered with cold, clammy sweat, and does really die of suffocation, in full possession of his mental powers, and *without* fever.

In the second form, the dyspnœa is a troublesome symptom and very early there is an unaccountable sense of weariness (canceira); there is an apparent swelling and hardening of the calves of the legs, which is, however, only a contraction of the surrounding tissue; the tendon reflexes are usually exaggerated, rheumatic pains in, and heaviness of the feet, the anasarca, a pathognomonic symptom of this form, first appears in the anterior part of the leg, and *not in the feet*, as in other diseases. The pulse is full and compressible, a systolic murmur is heard over the pulmonary valves, and in the large arteries; the patients become low spirited and alarmed. The dense, and slightly elastic œdema increases everywhere, hardly pitting at all on pressure. The serous cavities fill with effused liquid. There is a slight degree of numbness and often a little paralysis; the urine is, as in the first form, scanty and high-colored, of acid reaction and spec. grav. 1007-1030. Death comes by asphyxia, visceral congestion, or occasionally, by embolism of pulmonary artery (Silva Lima), and sometimes suddenly and unexpectedly (Lacerda).

The symptoms of the third form vary greatly. Sometimes the paralytic, and sometimes the œdematous predominating, and sometimes both come on simultaneously. These are the cases that become suddenly bad, and are known as "*Gallopante*" galloping, or acute pernicious form, the patient dying in six to twenty-four hours. In the mixed form, the sensitiveness of the muscles is very great, the feeling of exhaustion very pronounced; the dyspnœa great, swiftly progressing to asphyxia; there is a rapidly ascending paralysis, involving all of the respiratory muscles. The paralysis, either motor or sensory, is never complete. The sphincters are never involved in either form. There is never œdema without some paralysis, nor a case of pure paralysis, without some œdema; the diaphragmatic belt, a characteristic feature of the disease, is always present, but much more marked in the paralytic than the wet form. Rapidly increasing œdema marks the gravity of the case. In all cases there is a peculiar pufliness and lividity of the face, sometimes producing a mottled appearance. The white line produced by drawing the finger across the surface disappears slowly. In the œdematous cases there is an extreme turgidity of superficial vessels, and not infrequently pulsation of the jugulars. There is often tenderness of the periosteum of the long bones, with a peculiar roughness of surface. Digestion is nearly always deranged; dysentery, diarrhœa, and other tropical diseases often complicate it. Urine is *always* scanty, high-colored and contains epithelial cells, and degenerate fat corpuscles, with urate of ammonia, but rarely any albumen. It is to be regretted that no accurate quantitative analysis has been recorded that shows the amount of urea secreted. The skin is dry and harsh. The walk of the beriberic is unique, resembling that of a child learning to walk; the forward movement is nearly normal, the trouble being in recovering the feet. There is also a peculiar hoarseness of the voice in this disease, accompanied by a jerky, sighing breathing. Many of the isolated symptoms might be attributed to other well-known diseases; it is the grouping together, the peculiar association of the separate features that marks this formidable disease as *sui generis*.

In a disease characterized by symptoms so constant and marked, we should naturally expect to find marked anatomical changes, but we are disappointed. There are no constant lesions met with either in the cord, or large organs that cannot be considered secondary; the blood alone shows important morbid changes in the destruction and degeneration of the red disks, and has evidently lost its nutritive and oxygenating properties. The areola tissues of the heart, lungs, brains, and abdominal viscera, are found soaked in serous fluid, with effusion into the cavities; in eighty per cent. of the wet cases the pericardium is found distended with fluid, containing flakes of fibrin. In this variety the heart is found enlarged, softened and flabby, of pale-yellow color, filled with dark blood, sometimes fluid, sometimes clotted; when the latter, the dark clot extending into the pulmonary artery and large venous trunks. The muscular tissue of the heart-walls is always found undergoing fatty degeneration (which according to Ondenhover, is often the cause of death). The same condition is found in the tissue of the paralyzed voluntary muscles. In the paralytic form the heart is smaller and empty, and the degenerative changes are less marked.

The appearance of the brain and cord is variable: sometimes the medullary substance seems harder than normal, oftener, however, it is softened. It is frequently found, with ecchymotic spots at emergence of the nerves, the meninges are injected; the cord is sometimes altered by minute effusions of fluid into its substance, congestion of its vessels, spots on the surface of the arachnoid; microscopic examinations have

revealed annular sclerosis invading the antero-lateral pillars, with encysted granular masses in different parts of the spinal marrow. Sclerotic patches in the lumbar and dorsal regions of the cord are often found, the nerve tissue is often yellowish white and granular in appearance (Lacerda). Proliferation of interstitial connective tissue in the lateral columns and posterior roots is found. These varying conditions of the cord, however, do not always bear a just relation to its known mechanism in producing the symptoms found. Serous effusion into the minute connective tissue is the only constant change found.

There is evidently, first, a paresis of the cardiac ganglia, rendering the heart weak, and emptying its cavities; rapid degenerative changes follow in the muscular walls; there is a feeble vis-a-tergo and they yield to blood pressure, thereby producing dilatation and tricuspid insufficiency, with the inevitable regurgitation, capillary stasis and dropsy. A vaso-motor paralysis, acting in like manner upon the pulmonary arteries and arterioles, accounts for the murmur. Congestion alone may destroy life by impairing functions,— by sheer physical changes, and the inevitable consequence which want of circulation entails upon the blood;— blood-stasis, and separation of the elements, formation of coagulum, deposit of pigmentary matter, faulty oxygenation, etc.

If we allow ourselves to consider a single symptom or group of symptoms, the diagnosis is somewhat puzzling; but if regarded as a whole, the symptoms and physical signs present a case not easily mistaken. The individual symptoms, or even a group of the symptoms, may be found in rheumatism, myelitis, trichinosis, scurvy, reflex paraplegia, ordinary anasarca, pernicious anemia, and often the bronzed skin of Addison's disease is observed, granular degeneration of the kidneys, the cachetic dropsy of Andral, various forms of heart disease, and almost every disease due to profound anemia; but in all these there is some essential feature lacking, or in beriberi, there are well-marked symptoms incompatible with the known facts in other diseases. It is essentially a disease of inanition; there is starvation of the cerebro-spinal centres, and consequent anemia, from some important change in the blood that impairs the complex process of nutrition.

The pathognomonic features are the gait, fatigue, the diaphragmatic belt, and incomplete ascending paralysis, never involving the sphincters. The anæmia can hardly be said to be a distinguishing feature, as it is the most common of all conditions incident to tropical life.

What can we say of the cause of the disease? We cannot resort to that convenient term, malaria or marshmiasm,—the great asylum of all obscure diseases,—as it has none of the chief characteristics of malaria, no chill no fever, and when epidemic, almost no recoveries. It has a much narrower limit, also, and is not found in many places where malarial disease most abounds. Then, again, when we say malaria, we say nothing precise or definite, and before we use the term in so important a connection, we should at least define it, and give its elements a fixed character, and explain their *modus agendi*. We have only two points to guide us: first, its limited range and erratic distribution; second, the fact that it requires a residence of six or eight months to be subject to it.

One is thoroughly impressed with the belief that it depends upon some specific poison generated outside of the body; this belief finds corroboration in the fact that Dr. J. B. Lacerda, Director of the Government Laboratory of Experimental Physiology in Rio, and the discoverer of the application of permanganate of potash to snake-bites, has actually found in the spinal marrow and blood of persons dying of beriberi, and isolated, a germ which is in some manner constantly related to the disease.

Dr. Lacerda (7) has published a very interesting work, describing the micro-germ, and telling how he discovered it. He also finds the identical germ in certain kinds of rice. This receives strong support from observers in India where rice is one of the articles of diet *prohibited* to beri-beric patients. This talented observer has, during the past year, pushed his studies into a still more interesting field, and has found the microbe of beriberi to be identical with that which produces the horse-pest (*Peste de Cadeiras*) in the great island of Marajo (8). This disease of horses, in its clinical features, so closely resembles beriberi in the human subject, that Dr. Lacerda's discovery causes no surprise. It also receives strong support from the fact that, wherever the pest exists there also beriberi is found; to wit: in Bolivia, on the Solimoes (Herndon) Mattogrosso, Madras, (9) etc.

The limits of this paper oblige me to forego the pleasure of giving a synopsis of this most interesting work of one of Brazil's foremost investigators. Suffice it to say, that he follows Pasteur's methods, and has isolated this germ, which belongs to the great group of *ascomycites*, and cultivated it, and demonstrated its effects upon various animals, and its causal relation to beriberi, in a most convincing manner. If we accept this, the pathology is comparatively simple. The wide diversity of symptoms is explained by the periods of vegetation, or greater or less activity of the germ, as well as the varying susceptibility of persons attacked. The universal law governing the action of these micro-germs also obtains; in order that they may become noxious elements it is necessary that the normal forces of resistance be lowered, or that some inter-current abnormal condition be present, lack of acclimation is simply lack of habit to resist.

The question naturally suggested is, does the poison primarily affect the blood or the nervous system? The first evidence of morbid change is in the nervous system. The pain, an early and a characteristic symptom, depends upon a hyperæmic condition of the affected parts, due to a vaso-motor paralysis. The varying periods of incubation do not imply any difference in the character of the germ, but it is a question of the quantity introduced and the degree of resistance which it meets. The evidence that there is a primary lesion in the cord is strong; the paralysis is due to pressure from effusion; the effusion dependent upon rapid, destructive changes in the blood. The distrophy, the marasmus, would be indirectly connected with the disturbed function of the cord. The œdema would be referred to the disturbance of the vaso-motor enervation.

The slight paralytic disturbance, in the wet form, where trophic changes predominate, only shows how variable is the localization of the medullary trouble, now in the motor region, and again in the trophic area. Admitting the existence of a specific germ, we easily understand how the pathological changes are most sharply accentuated in the spinal marrow; a se-

lective affinity, which is a property of all morbigenic germs, enables it to seek the spinal marrow, as the most congenial breeding ground.

Once established in the cord, it has a two-fold action, a mechanical and obvious one, blocking up the capillaries, and disturbing the interstitial circulation, producing congestion, compression of the cellular elements, and consequent atrophy; a chemical action produced by the poisonous detritus, or ptomaines of the micro-organism, in its rapid reproductions, with their well-known fermenting and dissolvent action upon the blood, which is the receptacle of all the residue of organic cellular life; and this explains the dyscrasia, and the rapid and general serous transudation, the acute anasarca, which is the gravest feature of the disease. Now, then, it is not difficult to connect the symptoms with the lesions of the cord, as far as observed, and which are located chiefly in the lumbar and dorsal regions. When we remember that the spinal cord more completely fills the vertebral canal in the dorsal region, than either above or below, it will be understood how symptoms from serous effusion and other lesions will manifest themselves, first, by paralysis and unsteadiness of the lower limbs. Again, the nerves which supply the skin and muscles of the leg and foot arise from the third sacral, and are damaged by a lesion involving the lower part of the lumbar enlargement. It will be remembered that one of the earliest symptoms is a pain in the lumbar region. The actual loss of sensation with wasting points, especially if irregularly distributed, as in beriberi, refers to damage of the nerve-roots, outside of the cord, and relates to the meninges rather than the cord. This, too, coincides with observed lesions. (Lacerda.) Subacute and symmetrical myelitis of the anterior cornua, in the lumbar and cervical enlargement, causes paralysis and atrophy of all four extremities, the upper part of the limbs being normal; the sclerotic patches already mentioned, and other changes are most frequently found in this region.

The morbid agent and its products are eliminated slowly through the kidneys.

It is generally supposed that the number of deaths from beriberi is greater than that of any other disease on the Brazilian coast. I am inclined to think that this is an exaggeration. The percentage of deaths among those attacked is very much smaller than it was fifteen years ago, and it would be safe to say does not exceed 30 to 40 per cent.

Dr. Silva Lima's report of 112 cases gives the death-rate as 62.50 per cent. as follows:

Paralytic, 66 cases with 33 deaths . . 50 %
Œdematous, 23 cases with 18 deaths . 78.26 % } 62.50%.
Mixed, 23 cases with 19 deaths . . . 82.60 %

In India the death-rate is usually about 25 to 30 per cent. (Malcolmson).

The coast line where it prevails in Brazil, is nearly 5,000 miles long, from Manáo's, on the Amazon, to Santa Catherina, and its existence at all seasons of the year enables the aggregate of its victims to reach a high figure (10).

Concerning the treatment: this is extremely simple. Drugs do no good whatever. The patient should be removed at the earliest possible moment to a place where beriberi does not prevail. Bahia, beautifully situated along a high ridge, easily drained and continually exposed to the sea breeze, seems to be the headquarters of the disease. If patients are removed early before irreparable damage has been done, to the island of Itaparica, a low, flat place, just across the bay, they recover almost as if by magic.

The treatment should plainly be directed to removing the effused fluids, regulating the functions of the important abdominal viscera, especially the kidneys, increasing the action of skin and restoring to the blood its normal constituents; to these ends diuretics, cathartics and tonics are indicated. In India, Maxwell gave phosphorus in substance in 1–2–3 grain doses with success (11). (Lacerda explains the predilection of the micro-germ for the nervous tissue by the fact that this tissue abounds in phosphorus and he observed that the microptyte multiplied most rapidly in a culture acidulated with phosphoric acid.) A great variety of medicines are given, but change of surroundings is the only thing that cures, and in the acute pernicious type this fails. In Pernambuco a preparation of the "Mandioca" plant is used, and has a local reputation. It is simply a powerful diuretic. The *treek-farook*, so extensively used in India, is composed chiefly of terbinthinates with rhei and acts as a prompt diuretic and cathartic (12).

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REPORT ON THERAPEUTICS.[1]

BY FRANCIS H. WILLIAMS, M.D.

ERGOT.

NOT long ago, Professor Kobert showed that the noteworthy constituents of ergot are ergotinic acid, which does not promote uterine contractions, and cornutine and sphacelinic acid, which do. What he has published in the *Practitioner*[2] will be found of interest.

"Ergotinic acid: As regards this substance and its sodium salt, I may say I have administered it internally and hypodermically to pregnant bitches, rabbits, cats, and sheep. The doses given were at first small, and then increased, till finally they were toxic. The results of all these experiments entirely agreed with my former ones; when administered internally, even the largest doses are well borne, without the supervention of uterine contractions, and without any material disturbance of the mother. At most, the stools became semi-fluid. When injected subcutaneously, relatively large doses cause complete narcosis, lasting twenty-four to forty-eight hours, during which reflex action ceases; nevertheless, neither contraction of the uterus nor expulsion of the young occurs.

"After very large doses the blood-pressure falls very low, and, as a consequence, the young die, but are not expelled. From these experiments, it will be

[1] Concluded from page 279.
[2] Vol. 35, p. 415.

seen that ergot of rye does not owe its ecbolic power to the ergotinic acid contained in it, and that we may consider as clinically worthless all preparations of ergotinic acid, and of sclerotinic acid (so-called) and all aqueous extracts which do not contain those principles which are soluble in alcohol.

"Cornutine: This substance is now prepared and supplied commercially by Gehe & Co., and is not to be confounded with the very different ergotinine of Tanret. The latter is quite inert. The former, however, produces uterine contractions, both in animals which are pregnant, and those which are not pregnant, but with the difference that in these latter the contractions are accompanied by coincident vomiting, diarrhœa, salivation, and irregularity of the pulse; but in the former, the irritability of the uterus is much increased, and, as a consequence, the uterine movements come on after doses so small that no other symptoms at all appear. Consequently, it was always possible, in dogs and cats, to bring about the expulsion of the fœtus without seriously jeopardizing the life of the mother, when the cornutine was injected subcutaneously. It was a matter of no consequence whether the young were mature or not. The amount necessary to accomplish this result was less than an eighth of a grain. Gehe's preparation, not being as yet a chemically pure one, must be administered in larger doses.

"Sphacelinic acid: This is a resinous body, insoluble in water, and consequently, must be administered by mouth in the form of an emulsion. In dogs and cats, a sufficient dose never failed to evoke powerful labor pains in the pregnant uterus, followed rapidly by the birth of the fœtus; yet not one of the mother animals lost her life in consequence. The contractions after this substance we may describe as being tonic, and after the cornutine as being clonic. From the foregoing, it will be seen that in the ecbolic action caused by ergot, both cornutine and sphacelinic acid take part.

"As hinted at in my previous communication to this Journal, cornutine acts by influencing directly the centre for the uterine contractions situated in the spinal cord, but sphacelinic acid acts directly upon the uterus itself. And the combined action of these two substances is necessary if we wish to produce the action of ergot upon the uterus, and yet avoid any other untoward effects. Therefore, the only rational preparation for use in cases of parturition is one which contains all the cornutine and sphacelinic acid, but no ergotinic acid, for the latter is very injurious to the stomach, and has no influence upon the uterus.

"At my desire, Gehe & Co. have been good enough to prepare and supply commercially an article answering the above indications (extractum secalis cornuti cornutino-sphacelinicum Kobert). This is, of course, not in any way identical with other ergotins now in the market. Internally administered, it was, *when fresh*, exceedingly active, producing abortion with absolute certainty in pregnant animals. In the form of pills, it has been employed with success in man to stop hæmorrhages in various organs, and also in the treatment of vascular dilatation in cutaneous diseases. Unfortunately, it does not keep well for more than six months, and must each year be prepared afresh; a preparation a year old is almost absolutely worthless. It is necessary to state that neither ergot itself nor any of the numerous commercial and European and American preparations which I have examined have retained their therapeutic powers for more than twelve months. Of course the ergotinic acid remains unaffected, but this is valueless."

The work of Professor Kobert is valuable and interesting, and, it is to be hoped, will be supplemented by careful clinical observations.

CALOMEL AS A DIURETIC.[3]

Dr. Ernst Jendrássik, assistant to Professor Wagner, of Budapest, has created a genuine surprise by his exposition of a virtue residing in calomel, which has hitherto remained wholly unknown.[4] In fact, though some older writers recommend calomel in dropsy, and also allude to a certain diuretic action of the drug, this property is not even mentioned by any of the text-books at present in use. Wherever calomel is now being used in the treatment of dropsy, its drastic action alone is taken into consideration.

Being called upon some two years before to treat a case of dropsy in view of the wholly obscure causation of the affection and the strong suspicion of a syphilitic basis, our author instituted a mercurial treatment, beginning with inunctions of blue ointment, soon followed by small doses of calomel in combination with jalap. Scarcely two days had elapsed after the calomel treatment when the urine was voided in such quantities that the dropsical infiltration completely disappeared in a few days. A relapse of the dropsy a couple of weeks later was with equal promptness cured by the exhibition of calomel and jalap. This discovery, of course, led Jendrássik to further researches in dropsical cases, in which the diuretic action of the drug was distinctly established.

Calomel was generally given combined with jalap, though this addition is of no importance. Urination increased up to 9,500 c.c., in twenty-four hours, the polyuria usually being proportional to the extent of the œdema present. Jendrássik found that three-grain doses, given three to five times daily, showed the promptest effects. It is important and interesting to note that the diuretic action of calomel only shows itself simultaneously with the appearance of the symptoms which indicate the absorption of the mercury. The diuresis appears three days after having taken the drug and persists until the œdema has completely disappeared.

Constant experiments proved that in the combination doses of calomel and jalap, the diuretic effects referred alone to the first constituent, as the latter never produced these results when given alone.

The degree of the diuresis was found to be dependent upon two factors,— first, upon the size of the dose ordered; and second, upon the extent of the dropsy present. It was observed that the diuretic effects proceeded pari passu with the manifestations of mercurial absorption such as metallic taste in the mouth, increased salivation, stomatitis, etc.

Many of the observations of Jendrássik are too interesting to be wholly omitted.

Employing doses of two to three grains of calomel, he invariably obtained the diuresis, while larger doses, six to seven grains, always failed. Our author justly concludes that in this, as in other instances, the effects of a medication depend not upon the amount of medicine ingested but upon the amount absorbed. In the instance of calomel, larger doses provoke diarrhœa,

[3] Therapeutic Gazette, August 16, 1886.
[4] Deutsches Archiv. für Klinische Medizin, April 22, 1886.

and thus to a large extent prevent the absorption of the drug. But little time appeared to intervene between the taking of calomel and the appearance of its diuretic effects.

If given in the proper dose, the diuresis appeared usually within a couple of days. At the same time it was noted that a certain quantity only of calomel was required to effect the diuresis, and that any further surplus was wholly ineffectual, especially when polyuria had already set in.

The author can give no clue to the manner in which the diuretic action of calomel in dropsy is effected, since neither the heart nor the kidneys are directly influenced.

Experiments made with calomel (and also with jalap) on healthy individuals remained wholly negative; stomatitis and salivation set in, but no polyuria. The same failure was obtained in a case of pleuritic exudation with diminished urination. Still, the hypothesis (as a result of exclusion of other modes) is ventured upon that the primary factor in the diuretic action of calomel is the resorption of the œdematous fluid by the blood.

In high grades of dropsy depending upon heart-disease, the drug evolves its highest diuretic powers; in cases of slight œdema in pleurisy, and in the œdema of kidney-disease, the drug fails.

In conclusion, the undesirable after-effects of calomel, such as diarrhœa and stomatitis, are briefly referred to and means suggested to obviate them. Against the diarrhœa a small dose of opium (one-seventh grain) acts as a sufficient check, without influencing the diuresis.

Stomatitis is to be met by the use of chlorate of potassium given as a gargle, or if this be insufficient, internally (twelve grains daily).

FURTHER OBSERVATIONS ON URETHAN.[5]

Krapelin emphasizes at the very beginning of his paper that the drug produced in no instance any untoward secondary effects, only in the case of an alcoholic subject suffering from gastric catarrh, the stated large quantity of urethan caused vomiting. Interference with the appetite was never observed, even when the drug was given for several weeks in succession. Ten to fifteen minutes after ingestion of the drug a quiet sleep ensues, lasting usually several hours, and from which the patients wake refreshed. If this sleep is interrupted by any external causes, the hypnotic effects assert themselves again after the removal or disappearance of the interference.

Urethan, however, is not an energetic hypnotic and fails usually in cases of intense or even considerable excitation, where it is far inferior to paraldehyde. In delirium tremens especially, Krapelin saw no effects as observed by Sticker. Again, urethan is no anodyne, it does not remove pain, and in this respect can of course never replace morphine. In combination with morphine, urethan seems quite useful.

Krapelin mentions as especial indications for urethan the affections of the melancholic and paralytic type; in mania and as intimated above, in delirium tremens, urethan is useless and paraldehyde ought to be resorted to. Hence we see that only conditions of slight excitation or depression constitute the principal indications for urethan; besides, it is claimed to be useful in exhausting diseases even when fever coexists.

[5] Therapeutic Gazette, August 16, 1886.

The drug has certain advantages over paraldehyde, which cannot be questioned: among these are the longer duration of its effects and the absence of gastric irritation after its use.

Urethan can be taken simply in a watery solution, or, to correct its taste, with tinct. aur. cort.

Hospital Practice and Clinical Memoranda.

CHILDREN'S HOSPITAL.

CASES IN THE SERVICE OF DR. A. T. CABOT.
REPORTED BY MR. W. B. FISKE.

TREPHINING FOR EPILEPSY.—TEMPORARY IMPROVEMENT.

KATE E., six and three-quarters years old, was admitted to the Children's Hospital, May 13th, 1885.

Her parents were healthy and intelligent. There had been no nervous trouble on either side of the family. The child herself was said to have been healthy and perfectly bright until October, 1882. At that time she fell about four feet, making a wound over the left parietal bone.

She was not made unconscious by the fall, but in an hour began to have convulsions which lasted with slight intermissions for twenty-four hours. During the following month they recurred almost daily, gradually increasing in frequency till she once had twenty-three in one day.

When seized with a spasm she would fall down suddenly, grow livid, foam at the mouth, and clench her hands. After a few minutes the muscles would slowly relax and she would pass into a sleep. The body would usually be drawn to the left. About six months after the fall her mental powers began to fail. One year later she was seen by Dr. Cabot, who advised an operation.

At the time of entrance she was an idiot, her mind having failed greatly since she was seen the year before. About one and a half inches above and behind the base of the mastoid process on the left side, could be seen the scar of the old scalp wound. Just in front of this was a slight depression which was almost imperceptible, and could be covered with the ball of the finger. Slight pressure upon this point would make the child dodge the head as though it were painful. The mother said that she frequently put her hand there just before she had a convulsion.

The girl had a clear history of convulsions following an injury. There was a slight depression of the outer table of the skull, and the aura seemed to take its departure from that point. On account of the otherwise hopeless condition, it was decided to trephine, with the hope rather than the expectation of relieving the child by the removal of the depressed fragment, if such should be found. On May 21st, 1885, Dr. Cabot operated with thorough antiseptic precautions.

A crucial incision was made just in front of the scar and over the depression. The whole of the depressed portion was covered by the trephine.

The button of bone removed showed a decided thickening and had a considerable projection from the inner table. There was no intimate adhesion to the dura and no especial thickening of that membrane was noted. A thickened ridge upon the inner table

extended from the seat of operation down towards the base of the skull. This, which seemed to be the callus along a line of fracture was cut away with the bone-forceps. A drainage-tube was inserted, the flaps brought together with sutures and the wound dressed with iodoform and Lister gauze. After the operation she was placed in a room by herself, away from the noise of the wards. She was very comfortable until midnight. She then began to have convulsions, and had fourteen in the next eighteen hours. In the first twelve the twitching was noticed to have been on the left side as before the operation, but in the last two it was chiefly on the right. The dressing was changed under the spray, the discharge was very slight and the wound looked well. Ice cap applied. Pot. brom., gr. 10. t. i. d.

She slept well during the night of the 22d, and had on convulsions until the following morning. She had one then and one in the afternoon. They were shorter and less severe than the preceding ones had been and the twitching seemed equal on both sides. She slept considerably during the day but when awake was quite talkative and seemed more rational than she had been. Bromide increased to gr. 50 in the twenty-four hours. The dressing was not disturbed till the 26th, when the tube was removed.

June 1st the wound had healed by first intention and the dressing was left off.

She continued comfortable and seemed to improve in her mental condition. The bromide was reduced and discontinued on June 5th. From May 23d till June 12th there were no convulsions. June 12th she was brought down to the open ward among the other children, and within the first twenty-four hours she had eight convulsions. She remained in the hospital till June 20th, and had convulsions almost daily. From the time of the operation till her discharge, a period of four weeks, she had thirty convulsions. Sixteen of these occurred within two days after the operation, the remaining fourteen in the week after she was brought down among the other children. In the interval of nearly three weeks during which she was isolated she had none.

The mother was advised to take this child to an asylum where she could have absolute quiet, with intelligent watching, in the hope that the conditions which existed for three weeks after the operation might be encouraged and perhaps confirmed. She could not be induced to do so, but took the girl back to her home among other children where the convulsions soon returned and became about as frequent as they had been before the operation.

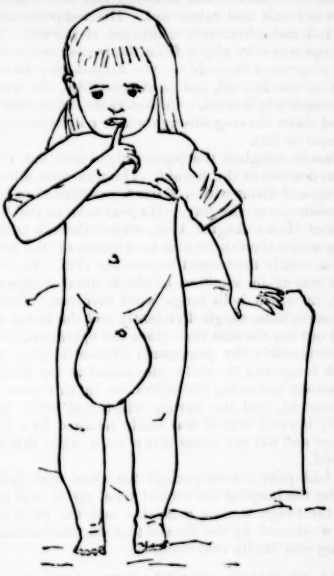
LARGE SCROTAL HERNIA. OPERATION FOR RADICAL CURE.

The child was two years and a half old. The hernia was first noticed when he was eight months of age. It had increased rapidly in size, so that when admitted to the hospital in June, 1885, the scrotum was as large as a cocoanut, the penis was almost obliterated. The hernia was on the right side. The ring through which it came was very large, easily admitting the thumb. The hernia was readily reducible but all efforts to keep it up by means of a truss had been fruitless. As a large portion of the intestines had been outside of the abdominal cavity for so long a time it was thought best to reduce the hernia and to keep it up, by rest in bed and bandages in order that the abdomen might adapt itself to its increased contents before proceeding to an operation.

This attempt was attended with considerable difficulty; in fact it was found impossible to keep the hernia up by any sort of bandage, as the slightest flexion of the hips would let the bowel out from under the pad. Finally a hip-splint was applied immobilizing that joint, and now pressure could be successfully used and the hernia controlled. It was thus kept in place for a week, and the child then suffering no distension or inconvenience, operation was decided upon.

Dr. Cabot operated July 6th, as follows:—

An incision about two inches long was made over the ring, care being taken not to prolong the incision toward the scrotum any further than was necessary in order to make it possible to keep the dressings from soiling with the urine. The sac was exposed and the



bowel, which was allowed to descend at the beginning of the operation, was reduced to the abdomen. The sac was not opened or ligatured, as a portion of the intestine which seemed like the vermiform appendage, was adherent to it. The ring was represented by a triangular aperture in the abdominal wall with its base about an inch in length upon Poupart's ligament, and with its apex at about the site of the internal ring. The tendinous edges of a considerable part of this opening were so widely separated and so resistant that they could not be brought together. The greatly redundant sac of the hernia was drawn up out of the scrotum, folded together and thrust into the opening. Stitches were then taken through the tissues about the pillars of the ring and these parts were drawn together as far as possible over the plug which the sac made in the ring, so as to hold it in place.

A short drainage-tube was inserted, the wound

closed with sutures and a dressing of iodoform and carbolic gauze applied. In order to keep the parts as quiet as possible a wire hip-splint was adjusted which immobilized the right leg. Every precaution was taken to protect the dressing from urine by means of a rubber cloth.

He was very comfortable after the operation, complained of no pain and had a good appetite, but was allowed only liquid diet. The outer part of the dressing was overhauled the second day, but as it was perfectly sweet and free from urine the inner dressing was not disturbed. One week after the operation the dressing was changed, one of the sutures was removed and a small quantity of pus welled up from the wound. The drainage-tube which had been inserted could not be seen or felt. He was now rather restless at night and his temperature was a little raised. Three days later another suture was removed and the drainage-tube was found and taken out. His temperature at once fell and afterwards continued at normal. The discharge was very slight from the wound and everything progressed favorably. On August 5th, the wire hip-splint was left off, and on August 13th, the wound was completely healed. Considerable induration remained about the ring through which no distinct opening could be felt.

When he coughed the parts bulged out, but there was no descent of the hernia. He was now allowed to be up and about with a T bandage adjusted to keep up pressure over the ring. He was sent to the Convalescent Home August 17th, stayed there a month, during which time there was no descent of the bowel and was finally discharged September 17th. In October he was again admitted to the hospital with pneumonia, in which both lungs were involved. During the first night he coughed violently and the bowel was forced out for the first time since the operation.

Unfortunately the pneumonia affected a large part of both lungs and the child succumbed to the disease. The benefit following the operation in this case was very marked, and the hernia which had before been entirely beyond control was easily retained by a light bandage and did not come down even when this was removed.

He had quite a severe cough for some time before entering the hospital the second time, and it was only when the cough became excessive and the child was much weakened by the disease that the obstruction at the ring was finally overcome.

LIPOMA OF RAPID GROWTH, SIMULATING MALIGNANT TUMOR.

The patient was a boy, two years seven months old. The tumor appeared on the inside of the thigh close to the pubes a year and a half ago. It was seen by several of the surgeons of the hospital in consultation, one year ago; and at that time although of but six months' growth it was as large as an orange, of hard consistency, and apparently deeply attached among the adductor muscles. The opinion then prevailed that it was a lympho-sarcoma, and as the result of an operation seemed doubtful the parents decided against it.

Last spring, however, the mother took the child to some physician who applied caustics. The eschars which were made readily healed, and this fact led to the hope that the growth might not be malignant. The mother was accordingly advised to take the child again to the city for advice. Dr. Cabot, who now saw the child, found that the tumor although much larger was softer and less firmly fixed. He advised its removal, and the child entered the hospital June 2d, 1885. The tumor now extended from the pubes almost to the inner condyle of the femur; was elastic and indistinctly lobulated. On June 3d, the child was etherized and an incision was made down to the tumor extending from just below the os pubis nearly to the inner condyle. The tumor was easily dissected out with very slight hæmorrhage; a few bleeding points were tied. A drainage-tube was inserted at either end of the incision, the wound was irrigated with liquor iodæ chlorinatæ 1-20, the edges of the incision brought together with sutures, carefully dried and dressed with iodoform gauze. By bandaging the leg to an outside splint, compression was applied over the wound.

During the night the child was very restless, and despite the use of chloral slept but little. In the morning his temperature was 103.8°.

The dressing was changed and the wound found to be looking well with the exception of considerable œdema of the thigh, in consequence of which two of the stitches at the upper end of the incision were removed.

He continued restless and fidgety, seeming stupid and saying nothing. June 6th, the third day after the operation pus was found upon the dressing for the first time, and in the tubes were shreds of foul-smelling, fatty tissue. A large phenyle poultice was applied in place of the previous dressing. June 10th, four days later, there was a free discharge of pus from both ends of the wound, and the scar from the caustic had softened and was opened, a little thin fluid and pus escaping.

During this time the child was in a state of semi-consciousness; he recognized no one and had not spoken since the operation. His pulse was rapid and feeble, and temperature about 101°. The amount of urine was noticed to be diminished on June 6th; on the 8th a trace of albumen was found, and a week later granular and epithelial casts with renal epithelium were found. After the 10th, he slowly regained consciousness and would recognize his friends, protrude his tongue, etc. He seemed to understand what was said in the room. The wound continued to look well, discharging i-iiʒ of laudable pus daily. The discharge became very thick and increased in amount about the 18th. At the same time the upper third of the thigh became considerably swollen and had a hard indurated feeling: no fluctuation could be detected. This swelling continued to increase for nearly a week, when it slowly began to diminish, but it was several weeks before it disappeared. There was no perceptible difference in the amount or character of the discharge either with the increase or decrease in the swelling.

June 25th, his temperature rose to 104.2°, there was a slight blush about the wound and the discharge stopped, but there was no constitutional disturbance. The temperature came down the next day, the blush rapidly faded and the discharge again became free. From this time convalescence was rapid and uninterrupted. The discharge gradually grew less and had ceased by July 16th. The thigh slowly resumed its normal size, although considerable induration remained along the line of incision.

He went home July 16th, and since that time has been well.

The growth was a fatty tumor, but the lobules of fat instead of being large and distinct were very small and white and surrounded by a fibrous stroma, which gave to the cut surface much the appearance of a glandular tumor.

The rapidity of growth in this case was rather remarkable as was the marked change in the seeming character of the tumor, as it increased in size. At first, while buried between the muscles of the thigh, it was hard and immovable, while later, when it pushed its way up from among them, it was much softer and had considerable mobility.

PYÆMIA.

Albert D., admitted Saturday, June 20th. A strong, rugged boy. A week before while at play, he had fallen six or seven feet from a fence, striking on his side. He complained of soreness about the body on Sunday but went to school as usual on Monday. On Tuesday he became feverish, vomited and complained of pain in the neck and back; these symptoms continued and on Thursday he became delirious. His parents brought him to the hospital and he was admitted on the medical side, but no definite diagnosis was made. Numerous fine moist râles and patches of consolidated lung were found, which seemed to indicate a broncho-pneumonia, but there were also some of the symptoms of typhoid. There was a pustular eruption scattered over the body, most marked about the knees.

His condition remained unchanged for the first two days; he was actively delirious a part of the time, and nothing happened to throw any light on the case. On the third day, June 22d, the parotid gland on the right side began to swell and grow painful. Dr. Cabot now made a diagnosis of pyæmia, and the boy was transferred to the surgical side. On the following day the middle joint of the second finger of the right hand became swollen and painful, and the next day a swelling appeared in front of the left ankle. The swellings all rapidly increased in size, and fluctuation was soon found. They were all opened early. That of the finger communicated with the joint and contained thick fetid pus; the one at the ankle was more superficial, but extended five or six inches up the leg, necessitating two openings; this also contained thick and fetid pus. The parotid abscess contained thick laudable pus.

The delirium passed away, but the boy lay in a typhoidal state most of the time, taking brandy ʒi every three hours, and quinine gr.iii t. i. d. June 30th, the parotid on the left side began to enlarge, but this subsided under poultices, without forming an abscess. He remained in about the same condition until July 11th, when his right elbow suddenly became painful and swollen, and the next day a swelling appeared in the region of the submaxillary gland on the left. Both of these abscesses enlarged so quickly that they were ready for operation by the 13th.

The pus evacuated from the submaxillary region was extremely fetid. At the elbow, an incision was made on the outer side and a counter opening on the inner side; a drainage-tube was passed directly through the joint. The contents of this abscess was then seropus.

The boy seemed better and brighter after these two abscesses were opened. His stimulants had been increased to iv ℥ daily; this with eggs constituted almost all his food. He went on for about ten days without any set-back: the discharge from his numerous wounds was slight and he seemed to improve; but on July 24th, the right thigh was seen to be swollen posteriorly; three days later this was incised and a large quantity of pus was evacuated. There was no communication with the hip joint or the pelvis, as far as could be found. While he was upon the operating-table a swelling about the size of an egg opposite the lower dorsal vertebræ on the right side, was noticed. It was soft and fluctuating and could be made to disappear by pressure as though it were pushed within the cavity of the body. There were no symptoms connecting this in any way with the spinal canal. As it was evidently quite different from the other swellings, it was thought wise to aspirate it, and about ℥i of clear fluid, containing a few shreds of tissue, was obtained. This was sent to Dr. Gannett, who reported that it closely resembled cerebro-spinal fluid. It contained a small amount of albumen and some chlorides.

From this time the boy improved steadily. The discharge from all the abscesses rapidly diminished, and those which did not communicate with joints healed quickly.

By October 2d, he had gained strength enough to sit up. On the night of October 14th, he began to complain of pain in the left elbow, and in the morning it was found red, swollen and fluctuating. An internal angular splint was applied and the pain and swelling rapidly disappeared. In two weeks the splint was removed and all signs of trouble were gone.

The past month he has gained much in strength and is running about the ward. There is still a slight discharge from the elbow and finger, and from the submaxillary gland. The elbow has become anchylosed, and excision is proposed when he becomes stronger.

A CASE OF PARIS-GREEN POISONING.

SERVICE OF O. W. DOE, M.D., BOSTON CITY HOSPITAL.
REPORTED BY CHARLES E. TAFT, M.D., FORMER HOUSE-PHYSICIAN.

Michael K., was brought to the Boston City Hospital, May 24th, by friends who stated that he had poisoned himself.

The following history was obtained:

For some time his health had been poor and for the past few days his mind had not been clear. He had not been melancholic.

About six o'clock this morning, after drinking a cup of coffee, he went to a cupboard to get some licorice-powder which he had been accustomed to take for constipation. By the side of the licorice stood some Paris-green which had been recently obtained by the family to use about the place for vermin. As it was rather dark in the cupboard he did not notice the difference in the powders and took three or four teaspoonfuls of the poison.

The mistake was soon noticed and a physician sent for, but between one and two hours elapsed before he arrived. An emetic was then given and vomiting induced. His physician then ordered his removal to the City Hospital. Before arriving there he vomited several times and had some cramping of the muscles of the arms and legs. In all it was six hours and a half before he reached the hospital from the time he took the powder. He arrived there at 12.30.

Examination showed a man about sixty years of age and of rather poor nutrition. His temperature was very slightly subnormal, pulse 96, and of fair strength. There was no tenderness over the abdomen. Said he did not feel sick and there was certainly but very little in his aspect to indicate his condition. Said he had no burning sensation in throat or abdomen.

Very soon after entrance he vomited freely, the vomitus containing considerable greenish powder. A stomach-tube was introduced and the stomach was thoroughly washed out with warm water and warm lime-water. He vomited very freely while the tube was in his stomach. The vomitus appearing to be too thick, from the large amount of green tenacious mucous which it contained, to come away readily through the tube. Soon afterward he had a loose dejection containing some of the greenish powder. An enema of olive oil, suds and turpentine was given and two ounces of castor oil by mouth. The latter was almost wholly vomited.

He remained quite comfortable till 2 P.M., when vomiting commenced again. Dialyzed iron and the hydrated oxide of iron were freely given.

Now he began to look badly. His hands and feet were cold and his pulse was weak and increased in frequency. He complained of cramps in his legs and occasionally in his abdomen. Heaters were applied and abundant stimulation given. He failed steadily and died at 6 P.M., in a collapsed condition.

Autopsy sixteen hours after death by Dr. F. W. Draper: Brain rather moist. Few sub-pleural ecchymoses. Hæmorrhage into the lungs in many places. Subendo-cardial hæmorrhages. Hæmorrhages into both kidneys. The stomach contained considerable mucous and had extensive hæmorrhages, especially about the pyloric end. There was some Paris-green in the plyroic end of the stomach. Intestines contained Paris-green along the whole extent. There were no hæmorrhages into the intestines.

Two points in this case seem especially worthy of mention: the slight amount of abdominal pain, usually a prominent symptom in cases of arsenical poisoning, and the length of time which elapsed before the symptoms began. Until the character of the vomitus was seen, the absence of prominent symptoms after so long an interval, the strength and general appearance of the man made it seem extremely doubtful whether he had taken a fatal amount of Paris-green.

Reese, however, mentions a few cases where the symptoms were delayed from seven to sixteen hours after the arsenic was taken.

— The administration of very small frequently repeated doses of calomel, is recommended by Dr. Musser, of Philadelphia (*Therapeutic Gazette*), in the treatment of summer diarrhœa and vomiting of infancy. In severe cases he recommends a powder containing one-eighth to one-twentieth of a grain of calomel, combined with one-twelfth to one-fourth of a grain of Dover's powder, if there be much pain, fever, or restlessness. These ingredients, combined with a small quantity of powdered sugar, make a very minute powder, which is placed dry on the tongue, and washed down by a spoonful of water, with or without stimulant. He recommends that the dose should be repeated every half-hour at first.

Reports of Societies.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

STATED meeting, March 25, 1886, the President, DR. J. C. WILSON, in the Chair.

INTRA-CRANIAL HÆMORRHAGE: RECORD AND CLASSIFICATION OF ONE HUNDRED AND FORTY-THREE CONSECUTIVE FATAL CASES OBSERVED IN MEDICO-LEGAL PRACTICE AND IN PRIVATE AUTOPSIES IN THE CITY OF PHILADELPHIA,

by DR. H. F. FORMAD.

Dr. Formad made some remarks on the different forms of intra-cranial hæmorrhages he had observed, and presented a number of specimens in illustration. There existed, he said, no well-defined descriptions of the various forms of intra-cranial hæmorrhages with reference to their etiology, and no classification that could be of any service in medico-legal examinations, and Dr. Formad suggested the classification and observations presented below as particularly adaptable for the latter purpose. These records may also be of some use to the surgeon who wishes to trephine. The observations were sufficiently numerous to warrant conclusions of importance for various ends. Dr. Formad regretted that he met his cases on the autopsy table only, and hence was unable to offer clinical details. In some cases the history was far from being reliable, and in a few the history was left to conjecture from the surroundings, the circumstances of the case, and the appearance and general lesions of the body. Dr. Formad wished to give credit to his colleague in coroner's work, Dr. R. R. Stewart, whose assistance in these observations he enjoyed, and also to his assistants, Drs. A. J. Plumer and George H. Chambers. Dr. Formad's cases of intra-cranial hæmorrhage embrace the results of kinds of head injuries (traumatic), and cerebral apoplexies (idiopathic hæmorrhages) as well. By the term cerebral apoplexy, he meant exclusively hæmorrhage in the brain, and did not refer to "congestive," "serous," "embolic," or "nervous," apoplexies, and other affections which tyrannic nomenclature has thrown together under the name of apoplexy.

Idiopathic cerebral apoplexy should also be strictly separated from traumatic cerebral hæmorrhage (this is not done by many writers). The latter can be further sub-divided into very well-defined sub-varieties of hæmorrhages, each etiologically distinct, as will be shown below. These observations will clearly show the necessity and usefulness of a classification such as suggested. There should never be any reasonable doubt at the post-mortem table as to whether a cerebral hæmorrhage was due to disease or to injury, or to both combined; nor as to whether a head injury preceded or followed an intra-cranial hæmorrhage. Dr. Formad believed that the diagnosis between the conditions just stated was much more difficult during life. He had seen errors made by foremost surgeons and physicians, and in the best hospitals in this city. Dr. Formad had seen cases of apoplexy diagnosed as fracture and trephined, and he had seen cases of fracture of skull unrecognized and untouched — left to die in the medical wards.

DR. FORMAD divided the cases of intra-cranial hæmorrhage observed by himself into the following eight different classes, the accounts being given here in abstracted form.

CLASS I: TWELVE CASES.

Post-mortem Appearance. One or more small hæmorrhages in the fasciculi teres in fourth ventricle; also ecchymoses in the lining of the other ventricles (no massive hæmorrhage anywhere); cerebral substance, as well as membranes, intensely congested. Cranium much congested; drops of blood oozing from cut surface and from periosteum all over. Marks of contusion in scalp, with more or less ecchymoses noted in all cases.

Histories. In two cases death was caused by electricity (details will be recorded elsewhere). Ten cases revealed histories of concussion of brain from injuries to head, without fracture of skull. Death was rapid or sudden from shock in all these cases. Six were males, and six females; the majority were young persons.

CLASS II: TWENTY-THREE CASES.

Post-mortem Appearance. Massive hæmorrhage (blood clot) of various sizes found between pia and dura mater; location, in the majority of cases, about opposite to place of application of violence. In none of these cases was this meningeal blood-clot located immediately beneath the point of application of violence. Ventricular ecchymoses also usually found. Brain anæmic in the majority of cases; whenever hæmorrhage large. Scalp injury well marked in some, in others less so, while in a few cases it was hardly noticeable.

Histories. Concussion from injuries to head, without fracture, in twenty-one cases; with fracture of skull in two cases. Death rapid (all within one hour) or sudden, either from shock or from compression of brain, the result of pressure from clot, or from both. Fourteen males, nine females; ages varied.

CLASS III: FORTY-FIVE CASES.

Post-mortem Appearance. Massive hæmorrhage (blood-clot) usually quite large; located between dura mater and inner surface of fractured skull, and at the site of application of violence only. Brain anæmic.

Histories in all cases revealed injuries to skull from accident, blows or other violence, resulting in fracture of skull. Death, on the average, ensued slowly from compression or anæmia of brain in the lapse of from several hours to several days (in few cases, from five to eight days). Thirty-eight males and seven females. Majority young and middle-aged persons.

CLASS IV: TWELVE CASES.

Post-mortem Appearance. Massive hæmorrhage, the same as in the preceding class, but occurring both at site and application of violence, and also on same point on the opposite site of skull; the first, a large clot, between dura mater and skull, while the latter, usually a smaller one, in the arachnoid (between dura and pia mater). At the side of the injury there was found a fracture of the skull in all these cases, so that they presented the combined features of Classes III and IV.

Upon the post-mortem table, however, there should be no difficulty in diagnosing such lesions at the present status of morbid anatomy as a distinct and well-defined science. After sufficient accurate observations have been made, and after seeing conditions repeat themselves, case after case alike, and having, in the majority of instances, cause and effect directly before the eyes, one should be enabled, in disputed cases, to make a post-mortem diagnosis which leaves but little room for doubt.

Histories in these twelve cases observed, showed injury to skull resulting in both fracture and concussion.

Death was nearly instantaneous in all these cases. Nine were males and three were females, mostly young and middle-aged persons.

CLASS V: NINE CASES.

Post-mortem Appearance. Punctiform and multiple hæmorrhages into the tissue of the dura mater which showed much thickening and adhesions to inner surface of skull from chronic pachymeningitis; great œdema of the pia mater. Brain congested, but no blood-clots in either ventricles or substance.

Histories in these cases revealed former attacks of sun-stroke or old injury of head. Death usually sudden and usually following a fall or severe intoxication and excitement. Ages of deceased between twenty and fifty; all males.

CLASS VI: THIRTY-FOUR CASES.

Massive hæmorrhage of various sizes into the brain substance proper, and thence into one or both of the lateral ventricles. Hæmorrhagic softening of brain substance of corpora strata or their vicinity. No meningeal hæmorrhage in any of these cases, though in some instances blood was observed to have leaked out from the inner ventricles through the transverse fissure and the fourth ventricle and some usually liquid (post-mortem) blood would be seen upon periphery of brain, in the fissures and within the meshes of the pia mater and the arachnoid. Brain substance in nearly all cases quite anæmic. Atheroma of cerebral vessels in all but three cases. Multiple small aneurisms of cerebral vessels noted in several cases. Chronic pachymeningitis in various degrees in all but five cases. In some cases there were scalp injuries from secondary falls; that is, falls that were the result of cerebral hæmorrhage. Many of these cases came under coroner's jurisdiction on account of suspicion of violence.

Histories wherever obtainable revealed either alcoholism, rheumatism or syphilis; middle or advanced age: twenty-six males, eight females. Death in the majority of cases ensued slowly. These are true cases of idiopathic cerebral apoplexy.

CLASS VII: SIX CASES.

Post-mortem Appearance. Massive hæmorrhage of various size, below pia mater, into brain substance, without breaking into lateral ventricles. In one case the blood-clot involved the substance of the pons and protruded into fourth ventricle; in two cases it occupied the substance of the right parietal lobe which was the seat of an abscess; in three cases the hæmorrhage was multiple, in small foci, with localized hæmorrhagic softening of periphery of brain substance in various places. In three cases there was atheroma and in the other three fatty erosions of the cerebral vessels. Chronic pachymeningitis in all cases. Brain substance congested.

Histories were those of former head injuries, alcoholism and probable syphilis. Death rapid, following intoxication or exertions. Age advanced in all cases; five men, one woman. Foul play had been suspected in all these cases.

CLASS VIII: THREE CASES.

Post-mortem Appearance. Massive meningeal hæmorrhage, below pia mater, combined with hæmorrhage into ventricles; no visible hæmorrhage into brain substance. Atheroma, and multiple small aneurisms of vessels of pia and of choroid plexus. Echymoses in scalp.

Histories of accidental falls. No previous symptoms of cerebral disease had been noted. Intemperate habits, injury of head leading to rupture of the diseased vessels, evidently had preceded the cerebral hæmorrhage. The persons were at work (washing) at the time, when nearly simultaneous with the concussion from the fall, death ensued. Both were women; ages fifty-seven and sixty-three years.

REMARKS AND COMMENTS.

A number of cases of intra-cranial hæmorrhage observed by Dr. Formad, he had excluded from the series above detailed. Several cases of compound comminuted fracture in which the skull, membranes and brain were partly pulpified into a mass and hence the hæmorrhage not being satisfactorily made out were excluded from the above records. He also excluded chronic cases of cerebral hæmorrhage and those resulting in abscesses or in a fatal lepto-meningitis or cerebritis after the patients had partly recovered from the immediate effects of the hæmorrhage. Dr. Formad did not incorporate into these records another large class of intra-cranial hæmorrhage, namely, that of infantile meningeal hæmorrhage. Of these he had seen many in coroner's work. Meningeal hæmorrhage is common in infanticides and fœticides; and even in still-born children. Dr. Formad could not plausibly explain the frequency of meningeal hæmorrhage observed in the still-born, otherwise than presuming that they were due to traumatic injuries from violence or to compression of the cranium during protracted labor or when forceps had been injudiciously applied. He did not meet with cerebral hæmorrhage in children, other than meningeal.

Returning to his classification, Dr. Formad stated that the quantity of the hæmorrhage or the size of the clot in any case of intra-cranial hæmorrhage appeared in all the cases he observed, to depend upon the duration or the time that elapsed from the moment of injury to death. In cases where death ensued rapidly or instantaneously from shock, as in many fatal cases of concussion, or even in fractures of skull followed by immediate death as in falls from a great height, the bulk of the ante-mortem hæmorrhage (the blood-clot) was remarkably small: or clots were occasionally entirely absent and only a post-mortem oozing of liquid blood could be observed. When death was protracted for several hours, then the blood-clot was usually large, weighing up to six or eight ounces, and causing death by compression of brain. In some cases of fracture of skull the hæmorrhage was probably delayed for several hours or ensues but very gradually.

Some patients are said to have walked around for many hours after the injury and subsequently when the blood oozed out in sufficient quantity to compress the brain, they fell, became unconscious and died in coma. In one case of this nature he had found a meningeal clot weighing eight ounces.

Dr. Formad observed that in the cases in which the intra-cranial hæmorrhage was voluminous and death instantaneous, there was very little scalp ecchymosis; whereas scalp hæmorrhage was more pronounced if the intra-cranial hæmorrhage was small and death delayed.

Further, Dr. Formad noticed that in no case where there was internal cerebral hæmorrhage, was there any meningeal hæmorrhage when cerebral vessels were normal; and in no case of traumatic meningeal hæmorrhage did he see any coincident ventricular hæmorrhage (except small echymoses) unless there existed some old lesion of the vessels or substance of brain. It appears, however, that blood from the lateral ventricles may leak through the foramen of Monroe into the third ventricle and thence by the aqueduct of Sylvius find its way into the fourth ventricle, but Dr. Formad did not see in any one of the cases he observed that a primary hæmorrhage into the fourth ventricle ever extended to the lateral ventricles, probably on account of its rapidly fatal character.

A hæmorrhage on the outside of an uninjured pia mater cannot reach the interior of the brain or the lateral ventricles.

The source of the hæmorrhage is often very difficult to determine. In fracture of the skull, the hæmorrhage is often diploic; in concussion of brain the hæmorrhage has for its source the vessels of the pia mater; in diseased conditions of the brain or in atheroma of vessels the small feeding branches of the middle cerebral and of the basilar artery bleed most frequently, and the blood breaking into the lateral ventricles forms clots, in either one or both of the ventricles.

The view expressed by Dr. J. A. Lidell in his large treatise on apoplexy (New York, 1873, p. 113) that "meningeal hæmorrhage not unfrequently occurs spontaneously, as well as in consequence of the operation of violent causes;" and that (see p. 120) "meningeal hæmorrhage of spontaneous origin is not a rare affection," is unquestionably erroneous. Yet such "*views*" are quoted by writers on forensic medicine and presented to juries in murder trials *as facts.* Ignorant or ill-informed post-mortem examiners can set murderers free, or on the other hand, can create unnecessary court trials.

CONCLUSIONS:

I. Hæmorrhage exclusively above the pia mater and above the dura mater, that is, on the outside of the brain, are always due to *traumatism* or to *sunstroke*, provided a cerebral source for hæmorrhage is excluded and the cerebral vessels and membranes were not diseased.

II. Hæmorrhage in the floor of the fourth ventricle is always traumatic, provided there are no blood clots in the lateral ventricles or any other part of the cerebral substance.

III. Hæmorrhage exclusively below the pia mater or in any part of the brain substance or in the ventricles (except the fourth), is always idiopathic, that is, is due to disease.

IV. There must be a diseased condition of the cerebral vessels or substance in order to ascribe a hæmorrhage to disease. There must be traumatism (a fall or violence) in order to account for a hæmorrhage in a normal brain.

V. The blood clot in concussion of the brain is not found at the point of application of violence, but always somewhere about the opposite side of the brain,

and always within the arachnoid, that is, between pia and dura mater.

VI. The blood clot in fracture of skull is always found at the point of application of violence immediately below and always between the dura mater and the fractured part of the skull itself.

VII. A blood clot formed within the cranial vault is more favorable to the patient if due to fractured skull than if due to a mere concussion.

VIII. Only clotted blood and infiltration of blood corpuscles into tissues indicate an ante-mortem hæmorrhage; liquid blood is due to post-mortem oozing, and only stains, but does not infiltrate tissues.

IX. Severe bruises and cuts of the scalp may be seen in cases of idiopathic apoplexy where a sudden cerebral hæmorrhage causes a person to fall.

X. In some cases it is impossible to decide by medical examination alone as to whether a head injury and the resulting hæmorrhage is due to a fall or to violence.

XI. External marks of violence may be invisible to the unaided eye in some cases of injury to the head or other parts; but are easily detected and distinguished from post-mortem spots by means of the microscope.

XII. The bulk of an intra-cranial hæmorrhage stands usually in inverse proportion to that of the external scalp hæmorrhage.

Dr. T. D. Dunn presented an unusual case of cortical hæmorrhage with rhythmical contractions of the left side of the body. A widow, aged seventy-three years, came under his care June 23, 1886, with the symptoms of congestive apoplexy. In a few days she recovered sufficiently to be able to leave her room. With the exception of some mental impairment for several months before the attack her health had been good. February 6, there was a second attack during the night, and when Dr. Dunn saw her there were regularly recurring movements of the left side of the body. Sensation and consciousness were not affected. The right side of the body could be moved at will, but articulation was impossible. The contents of bowels and bladder were discharged involuntarily. The movements continued during sleep. The movements gradually diminished, being lost in the leg on the fourth day and in the arm on the fifth. She died six days after the attack. At the autopsy a clot as large as a hen's egg was found situated on the right side of the brain very superficially extending from the ascending parietal convolution to the occipito-parietal fissure and from the convolution of the longitudinal fissure to the temporo-sphenoidal lobe. The convolutions pressed upon and partially destroyed were the ascending parietal, the convolution of the longitudinal fissure, the supra-marginal and the angular gyri.

ANOMALY OF HANDS.

Dr. F. A. Packard presented a patient having a congenital anomaly of both hands. The right hand consists of a thumb, an index finger and a little finger with only two metacarpal bones. The thumb has two phalanges and articulates with the same metacarpal bone as the index finger. The power of flexion is absent. The index finger has three phalanges. It can be flexed as a whole but the individual phalanges are fixed. The little finger has three phalanges. The left hand consists of a thumb, index, ring and little fingers with four corresponding metacarpal bones. The patient is one of five children. His mother and father are normally formed. One sister has one hand that resembles his left. Another has a left hand similar to his, and on the right hand has the middle and ring fingers united throughout their length. One brother has both hands similar to this man's left. The only member of his generation not deformed is his twin brother. He has several children, all normally formed, and so, too, with his nephews and neices.

CARCINOMA OF THE STOMACH.

Dr. J. M. Barton presented a tumor of the stomach removed from the body of a man, aged forty-seven years. His digestion became impaired two years ago, and soon afterward he noticed the tumor. The symptoms were mainly those of chronic gastritis, with at one time a profuse hæmorrhage. The tumor was hard and well defined, and occupied the epigastric region. At the autopsy the tumor was found occupying the upper portion of the pyloric outlet of the stomach and did not encroach enough on the outlet to prevent the ready passage of a finger. It was found on microscopic examination to be a scirrhus carcinoma.

THE AMERICAN GYNÆCOLOGICAL SOCIETY.

Eleventh Annual Meeting held in the hall of the Johns Hopkins University, Baltimore, Md., September 21, 22, and 23, 1886.

FIRST DAY. — MORNING SESSION.

The Society was called to order by the President, Dr. Thaddeus A. Reamy, of Cincinnati.

After the calling of the roll, Dr. H. P. C. Wilson, of Baltimore, delivered the address of welcome.

In the name of the resident Fellows, of the general profession and of the citizens of Baltimore and in the name of her women, he extended to the Society a hearty welcome. Were our hands as big as our hearts, the speaker said, we should kill you with kindness. Baltimore is ever ready and willing to welcome you whenever you are ready to come. I can assure you of the great interest which this community takes in the subjects of your deliberation.

The first paper was on

THE DIVISION OF THE CERVIX BACKWARDS IN SOME FORMS OF ANTEFLEXION OF THE UTERUS WITH DYSMENORRHŒA AND STERILITY,

by Dr. H. P. C. Wilson, of Baltimore.

This is an old subject. The operation from want of a judicious selection of the cases, by being done by unskilled hands in proper cases, by being done in unsuitable cases and from want of appropriate after-treatment this operation has been barren of good results in certain hands and followed by bad results in other hands. This operation has been substituted by the use of stems, sponge tents, and dilators, but I have found no measure so safe and efficient in the classes of cases to which I shall call attention, as the knife.

The classes of cases in which I would recommend the operation are:

First, Those of anteflexion of the uterus, with a hard indurated cervix, where the body is bent upon the neck, or the neck upon the body, forming a more or less acute angle.

Second, Those cases of acute flexion where the cervix is hyperplastic and indurated and dense as cartilage.

Third, Those cases where there is a hard unyielding internal os, through which the probe passes with difficulty and in its passage gives the sensation of passing over rough dense cartilage, while the finger in the sulcus between the body and the neck in front, gains the sensation of a strong cord tied around the uterus. This third class is frequently combined with the first, and often with the second. In a typical case calling for the knife, all these lesions co-exist. Nearly all these cases are sterile. In all of them the nabothian and utricular glands are hypertrophied and indurated.

The different methods of operating were then reviewed. If the patient escapes the secondary results which are liable to follow the use of tents, they are the most efficient means of overcoming the difficulty, next to the use of the knife. The forcible dilatation does not restore the anteflexed uterus. For the purpose of rectifying the difficulty, the knife is the surest means in the cases which have been referred to. Where the posterior lip of the cervix is divided and the internal os is divided anteriorly and posteriorly, the muscular fibres are paralyzed and the longitudinal fibres contract and tend to rectify the position.

The method of operation was then described. With the patient under an anæsthetic, the uterus is drawn downwards by a tenaculum in the anterior lip. The posterior lip is then divided with scissors up to the vaginal junction. An uterotome is next passed and the internal os divided anteriorly and posteriorly to an extent sufficient to permit the introduction of a large sound. The parts are allowed to bleed freely. A pledget of cotton soaked in a mixture of Monsel's solution, iodine and glycerine is then introduced into the cervix and over this pledgets treated with Monsel's solution and water and the vagina lightly tamponed. These are not removed until the third day. All manipulation of the uterus is avoided for at least two weeks. A sound is then carefully passed and every second day the os is gently stretched with a steel dilator. The patient is allowed to fully recover from the operation, which usually requires one month. Local treatment is then suspended for one month to allow the intra-uterine mucous membrane to improve. The patient then returns and applications of Churchill's tincture of iodine are made to the endometrium two or three times a week. The treatment after the lapse of a month is again suspended to be resumed in the course of one or two months. If this after-treatment is not carefully and properly carried out, the operation had better not be done. The speaker had performed the operation four hundred times, and had never obtained as good results from any other method. In no case has he had a death which could be attributed directly to the operation. If the patient is not disturbed by meddlesome after-treatment for ten days subsequent to the operation, there is not much danger of inflammatory troubles.

There are some cases of dysmenorrhœa and sterility where this operation is entirely unsuited. It was recommended only in the cases described in the beginning of the paper. Several illustrative cases showing the good effects of the operation in overcoming dysmenorrhœa and sterility were related.

DISCUSSION.

DR. T. A. EMMET, of New York. Fifteen or twenty years ago, I should have been willing to endorse all that has been said by the speaker. I think that I have done as much harm as any one by this operation. We must separate dysmenorrhœa and sterility as being due to widely different causes. Mechanical dysmenorrhœa, I believe to be a myth. We must also separate two conditions of flexion, one a flexure of the neck, a congenital defect, and the other a flexure of the body of the uterus due to preceding inflammation outside of the uterus. Sterility resulting from this latter cause is not relieved by the operation, and its performance is attended with great risks to life. The congenital flexion is the only one in which I operate to relieve the sterility. I do not operate for the dysmenorrhœa. There are a few cases of the inflammatory form of flexion where the operation benefits the reflex symptoms by its revulsive action.

In those cases where I have done the operation I have not left a raw surface but have drawn the vaginal mucous membrane to the bottom of the wound and secured it with stitches. This does away with the necessity for plugging and the fear of hæmorrhage.

This operative procedure is not free from danger. I have known of at least twenty deaths from it. If, as has been suggested by Dr. Wilson, all the effects of previous inflammation are removed, there is not the same danger, but I cannot see that the operation will do any good.

DR. JAMES R. CHADWICK, of Boston. I have not been successful with this operation in curing sterility or dsymenorrhœa. I regard the flexion as always congenital, the result of the persistence of the infantile shape of the uterus. This I am convinced is not confined to the anatomy of the organ, but also involves the function. The defect probably extends to other portions of the genital tract. The only cases in which I have had any results from operation have been where there is flexion with a small external os. In a certain proportion of these cases impregnation has followed the operation. I think that the operation should be restricted to those cases in which there is flexion with a small external os, but in which the uterus seems to be well developed in other respects.

DR. W. H. BAKER, of Boston. Some ten years ago, I saw a number of cases in which this operation was done, and while the immediate results were very gratifying, yet in many cases the patients did not retain these good results. The question arises, if this operation which was performed so frequently, was successful, would it not have lasted? It was found that in many cases, less severe measures would give equally good results. This has led to a clearer discrimination of the cases. Of late years I have limited the operation to the class of cases to which Dr. Emmet refers, in which there is a congenital malformation and those in which there has been an inflammatory condition, the results of which have been removed. The good results which Dr. Wilson reports must be explained by the great care in the after-treatment which he practices.

DR. FORDYCE BARKER, of New York. Some thirty years ago I saw Simpson perform this operation a number of times. He performed it in his office and did not seem to apprehend any danger from hæmorrhage. I employed the operation in a few cases, but

I soon gave it up. The only cases in which I employ it is where the narrowing is at the os externum.

Dr. J. Scott, of California. I have practised the operation, but while the immediate results have been good, I have been disappointed in the ultimate results. I have gradually come to limit the operation to the cases described by previous speakers. After the operation, the patient should be confined to bed at perfect rest, and hot water injections be employed every two hours.

Dr. W. T. Howard, of Baltimore. I have given all the operations alluded to a fair and full trial. My experience has not shown me that any particular operation is the one for all cases. By the antero-posterior incision, I have had some excellent results. With the precautions adopted in operating in other portions of the body, an incision of this kind, in the majority of cases, should not be dangerous. Dr. Mundé, in a paper on this subject, reports over three thousand cases, with only nine deaths. I think that forcible divulsion is attended with as much risk as incision. In my practice, the method adopted has varied according to the case. In some I have employed the posterior incision, in others the bilateral incision, but, in the majority of cases, I dilate, using antiseptic precautions, and never taking less than twenty to thirty minutes to complete the operation.

Dr. H. P. C. Wilson, of Baltimore. I have not heard anything in the discussion to convince me that, in properly-selected cases, division of the cervix is not the best thing to do. As I have already said, if the operation is not followed by proper after-treatment, it had better not be done. The danger is not from the operation itself, but from the improper after-treatment.

ANOTHER MODIFICATION OF EMMET'S CERVIX OPERATION, WITH A CASE IN POINT,

by Dr. B. Stansbury Sutton, of Pittsburg.

A case of old-standing neglected double laceration of the cervix was reported. The cervix was composed of dense, hard, hyperplastic tissue, almost cartilaginous in character. An operation by the ordinary method was out of the question, for the sutures would not have held. In order to overcome the greatest amount of cicatricial tissue and remove the condition, the following procedure was resorted to: The lower lip of the laceration was denuded of its altered mucous membrane, leaving only a narrow strip, corresponding to one-half of the strip usually left to serve for the future os; the upper lip was treated in the same way, leaving the opposite half of the strip of mucous membrane. When the flaps were brought together, the strips of mucous membrane lay side by side, with the undenuded surface of one flap in apposition with the denuded surface of the opposite flap. In this way, union in the position of the future canal was prevented. Good union followed the operation, and at the end of three weeks a Simpson sound was passed without difficulty. This operation may be of service in certain cases where the usual operation cannot be performed.

DISCUSSION.

Dr. Thomas A. Emmet, of New York. The modification seems to be an ingenious one, but its value can only be determined by future trial. In such cases, however, where there has been such cystic degeneration, it is often better surgery to amputate a portion of the cervix, so as to get into healthier tissue. In a certain number of cases, I have always performed amputation. I have always objected to amputation of the cervix in so-called elongated cervix. I use the term in the sense in which it is employed by the Germans. If we remove the tissue to a depth below the follicles, the remaining dense tissue will gradually soften. I do not mean to amputate to as great a depth as the dense tissue extends.

Dr. George J. Englemann, of St. Louis. I have found no difficulty in preventing union, and I have paid very little attention to the strip of mucous membrane. I have, in such cases, as has been described by Dr. Sutton, cut away nearly all the mucous membrane, and inserted a short piece of fine catgut. This keeps all the opening which is necessary. When, however, we come to such extreme cases, I think that it is better not to attempt what has been termed Emmet's operation, but to resort to partial amputation, as is performed in Germany.

Dr. W. H. Baker, of Boston. I think that if we can restore the healthy character of the strip of mucous membrane and retain it, that is the best surgery. In this class of cases, I have been in the habit of removing a transverse wedge-shaped portion of each lip of the cervix, and then bringing the parts together. In this way, the hyperplastic tissue preventing the apposition of the surfaces is removed. If proper preparatory treatment is employed, I think that the saving of the strip of mucous membrane can be accomplished.

Dr. R. Stansbury Sutton, of Pittsburg. In the case described, there was only one of two things to be done — either to remove the cervix, or devise some new method of operating. This modification gave complete satisfaction in this case, and I purpose trying it in other similar cases.

In the absence of the author, the following paper was read by the Secretary:

NOTES ON THE TREATMENT OF RECENT LACERATION OF THE CERVIX UTERI,

by Dr. Elwood Wilson, of Philadelphia.

Occasionally a tear of the cervix can be recognized immediately after labor, but sometimes this cannot be done. The patient should always be examined ten or twelve days later. If laceration be found immediately after labor, injections of corrosive sublimate solutions, one to five thousand, with the insertion of an iodoform suppository, should be resorted to. The vagina should be irrigated every other day, and the suppository renewed. When the laceration is found within three weeks after delivery, the following treatment should be employed: After the surface has been carefully cleansed and dried, it should be painted with a solution of nitrate of silver, one drachm to the ounce of distilled water. From three to five applications, at intervals of five days, are usually required. In every case in which the author has tried this measure (six in number), the result was entirely satisfactory.

DISCUSSION.

Dr. Fordyce Barker, of New York. It seems to me that the practice recommended in the paper is better worthy of trial. It is much preferable to the rule laid down within the past few years, that if there is a laceration it should be closed immediately after labor. If this method will effect union it should be tried.

Dr. Thomas A. Emmet, of New York. I suppose

that a certain amount of laceration occurs in every labor, but it is wonderful what nature will do to restore the cervix where septic poisoning is not present. It seems too, that in all cases where, under favorable circumstances, nature has failed to repair the damage, there have been symptoms indicating septic inflammation. In the cases reported I believe that the same results would have been obtained even if nitrate of silver had not been employed.

DR. J. SCOTT, of San Francisco. In only one case have I attempted to sew up the cervix shortly after labor. In this case there was an extensive tear of the cervix and of the perineum. There was considerable bleeding, and five hours after labor I thought it advisable to sew up the cervix. The tissues were so soft that it was with the greatest difficulty that I could get the sutures to hold. Union took place, however, both in the cervix and in the peritoneum.

AFTERNOON SESSION.

The first paper was entitled,

PELVIC INFLAMMATION; CELLULITIS, VERSUS PERITONITIS,

by DR. THOMAS ADDIS EMMET, M.D., of New York.

In this country the term cellulitis has come to signify pelvic inflammation, without reference to the special form, but its origin is supposed to have been in the connective tissue. So close is the relation between the connective tissue and the peritoneum, that it seems impossible for inflammation to be present in one without affecting the other. There are situations, however, as between the uterus and bladder, and between the uterus and rectum, where cellulitis might exist without involving the peritoneum. Inflammation in these situations tend to resolution, and so the tissues soon regain their healthy condition if suppuration does not take place. After septic poisoning, the peritoneum rapidly becomes inflamed and adhesions occur, the circulation in the bloodvessels becomes more or less obstructed, and the actions of the absorbents is greatly impeded. Finally a condition is produced which remains long after the symptoms have subsided, and one not prone to change or amenable to treatment. In such cases a fresh attack is provoked by slight causes.

It has been objected that when the abdominal cavity is opened for the removal of the ovaries, very slight evidences of inflammation are found. In a recent case, I expressed the opinion from the vaginal examination that a thickened and shortened left broad ligament would be found at the operation. No broad ligament was found, but there was an enlarged tube lying against the side of the vagina. Similar cases have been noted. I should explain these cases in this way. If there is an inflammation between the folds of the broad ligament, it must involve the peritoneum. As a result of the inflammation, the connective tissue disappears and adhesion of the opposing surfaces takes place. The broad ligament is flattened out so that Douglass' cul-de-sac disappears on that side. The vaginal wall is raised up so that it and the tube lie in contact. This is the condition found by the surgeon when he operates for the removal of the diseased fallopian tubes. In all these cases I feel satisfied that there has been inflammation of the connective tissue. I think that the inflammation has been secondary to the cellulitis in every instance except where the primary inflammation was the result of gonorrhœa. If my observations are correct they would prove that the connective tissue never regains its integrity after having been once inflamed. If the surrounding tissue has restored the loss the part will return to its normal condition. If the loss cannot be replaced, nature can only repair the injury by a process of adhesive inflammation of the parts involved.

I have used the term thickening of the broad ligament, but I have not meant to imply that there is a deposit of lymph between the layers of the broad ligament. The enlargement is, I think, due to the dilated state of the veins. The condition is one easily aroused to activity.

It is still a moot question as to the way in which the tube has become involved where gonorrhœa is not the cause of the inflammation. In septic poisoning after surgical injuries, I believe that the connective tissue of the veins and lymphatics first become involved and that the inflammation of the peritoneum is secondary. There is no evidence to prove that the inflammation passes into the uterine canal and thence to the tube, except in such cases where the process is due to gonorrhœa.

The prognosis as to the result to be gained by local treatment is doubtful in those cases due to gonorrhœa, in those cases where the pelvic inflammation is of long standing, without reference to the cause, and in those with a history of frequently recurring attacks. In cases which can secure every attention a cure by local treatment can sometimes be effected, but a long time is required. In cases which have to gain their own living, we may seriously consider the advisability of an operation after having gained the consent of the patient after a true representation of the operation and its results. We should enter a protest and the profession should demand a recognition of the responsibility of those who are indiscriminately operating for the removal of tubes and ovaries. It requires an expert to determine when the operation is necessary, and still more experience and skill to do it with safety to the patient. It should only be done as a last resort after other measures have failed. In a number of cases in private practice I have succeeded in restoring the patient to health by local treatment, for whom the operation had been strongly urged. If we could get accurate statistics I think that it would be shown that the average amount of benefit gained does not compensate for the amount of risk. I believe that the operation is done too often even by those who have the least death-rate. I predict that five years will not pass before it will be almost necessary to offer an apology when this operation is proposed.

DISCUSSION.

DR. ROBERT BATTEY, of Georgia. From my experience it has seemed to me that the pelvic cellulitis which gives so much trouble, was in a large proportion of these cases secondary. So far as disease affecting the tubes is concerned, I believe that if we throw out of consideration the gonorrhœal cases, the primary disease starts in the ovary. I regard most of these serious inflammations of the pelvic cellular tissue as dependent upon cystic or cirrhotic disease of the ovary.

With reference to the frequency with which this operation is done, I must confess that I am largely in sympathy with the speaker. I think that the opera-

tion is done too often. I do not believe that every case of organic disease of the ovary requires operation.

In reply to a question of Dr. Fordyce Barker, asking him to state the grounds on which he would advise removal of the tubes and ovaries, Dr. Battey said that every case must be determined for itself. If I had a poor miserable patient, without the means of comfortable subsistence, suffering with ovarian or tubular disease, I would operate. If I could put such a patient under suitable surroundings and under a prolonged course of treatment, I might not think of the knife, but we have to look at the cases as they exist. I do not require in my cases an absolute diagnosis of disease of the tubes or ovaries prior to operation. It is sufficient for me to know that the general health is broken down by reason of the perverted function of her ovaries, that she is utterly miserable, that there is no reasonable hope of restoration to health by other means, and that there is a reasonable prospect of restoration by removal of the ovaries. Under such circumstances I unhesitatingly operate, and contrary to my former view, I do find that the ovaries are diseased.

DR. R. STANSBURY SUTTON, of Pittsburgh. I believe that when the ovary is diseased and cannot be cured by ordinary means, when it is interfering with the health of the woman and her duties in life, it should be removed. If the ovary is diseased and is a burden to the woman it is as much the duty of the surgeon to remove that ovary as it is to remove a diseased eye-ball. I agree that the operation is being done too often, not, however, by competent men, but by incompetent men.

The conditions which require the operation are not always clearly understood before the abdomen is opened. I do not believe that a man is compelled to be positively certain of what he is going to find before operating. The speaker then presented several specimens and described the cases from which they were removed.

DR. BUSEY, of Washington. I think that if pathologists will return to the histological basis, there will not be the difference of opinion which now exists. I believe that it is now held that the cellular tissue is really a vast lymphatic structure and that the peritoneum is a large lymphatic sac. Instead of discussing nice distinctions between pelvic cellulitis and pelvic peritonitis, it would be better to classify as pelvic lymphangitis, these different varieties.

DR. J. SCOTT, of San Francisco. I might mention some of the cases bearing upon this point which I have seen. One was a patient supposed to have fibroid tumors. The abdomen was opened and both ovaries found to contain pus. They were removed and the patient recovered. In a second case the patient presented a tumor in the right side. The temperature record was kept for two months, during which time it did not vary half a degree. On opening the abdomen, the ovary was found to contain ten ounces of pus. The right ovary was removed, but the left appeared to be healthy and was left in position. During the operation the bladder was opened. This was sutured and the patient made a good recovery. Five weeks later the patient complained of pain in the left side, and on examination, I found an enlarged left ovary; this was removed and the patient promptly recovered. In a somewhat similar case, one ovary was removed. In a short time the other enlarged, but the operation was postponed and the woman died of rupture of the abscess.

DR. MATTHEW D. MANN, of Buffalo. I wish to allude to the possibility of one tube and ovary being diseased without involvement of the other. There is no reason why it should be so; I have in several cases where the disease appeared to be limited to one side, removed but one ovary and the result has been a perfect cure. This operation avoids some of the objections urged against the removal of both ovaries.

DR. H. P. C. WILSON, of Baltimore. I believe that where there is a general cellulitis, there is more or less pelvic peritonitis. These two affections are often associated. In the early stages, the inflammation is often controlled by active treatment. If it is not controlled, it may go on to the formation of abscess. The pus may be discharged and the patient recover. Occasionally the abscess occurs in the tube or ovary and these are the cases in which laparotomy is often called for. I agree that the operation is done too frequently. The point which Dr. Mann has raised that it is not always necessary to remove both ovaries, is a very important one.

The officers for the ensuing year are as follows: *President*, Dr. A. J. C. Skene, of Brooklyn; *Vice-Presidents*, Dr. John C. Reeve, of Dayton, O., and Dr. Elwood Wilson, of Philadelphia; *Secretary*, Dr. Joseph Taber Johnson, of Washington; *Treasurer*, Dr. Matthew D. Mann, of Buffalo; *Council, additional Members of*, Drs. W. H. Baker, of Boston; C. C. Lee, of New York; T. M. Trysdale, of Philadelphia; and A. Reeves Jackson, of Chicago.

The following new members were elected:—Drs. Charles M. Green, of Boston; A. F. A. King, of Washington; E. C. Dudley, of Chicago; A. W. Johnstone, of Danville, Ky.; J. E. Janvrin, of New York; H. Marion Sims, of New York; I. F. Baer, of Philadelphia; and W. Gil Wylie, of New York.

It was decided to hold the next meeting in New York, beginning September 15th, 1887.

A communication with reference to the organization of a Congress of American Physicians and Surgeons, was presented.

Dr. John C. Reeve, of Dayton, O., offered the following:

Resolved, That this Society expresses an opinion favorable to the formation of the proposed Congress, but that the committee be instructed not to favor any plan looking towards a surrendering of its distinctive title character, or to interfere with the full and entire management of its own affairs in every respect.

The following amendments were offered and accepted.

(1) That this Society does not favor meetings of the Congress oftener than biennially.

(2) That the committee opposes, as far as possible, meetings in the month of June.

Resolution as amended adopted.

The committee consists of Drs. Samuel O. Busey, of Washington; Fordyce Barker, of New York; T. A. Emmet, of New York; James R. Chadwick, of Boston; and Joseph Taber Johnson, of Washington.

(To be continued.)

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CEREBRAL INFANTILE PARALYSIS.

STRUMPELL[1] reported two years ago twenty-four cases of cerebral infantile paralysis, in children from four weeks to six years old. The affection comes on without known cause, attacks healthy children, and resembles very closely acute spinal paralysis, anterior poliomyetitis. There is an initial stage of fever, with vomiting, diarrhœa and convulsions. After this stage has passed away complete hemiplegia is discovered.

It is questionable whether the affection is ever fatal, but he suggests that this may be the cause of some of the fatal cases of convulsions and severe cerebral symptoms in children. The hemiplegia seldom remains complete; the child finally becomes able to walk, although it may go with a limp, but the arm remains more paretic and loses its power for finer movements. The paralysis is not as complete as in some cases of spinal paralysis. Paralysis of the lower muscles of the face and strabismus have been observed in rare cases. There may be menoplegia, or merely ataxia. The growth may be arrested, but there is never degenerative atrophy or reaction of degeneration. There are distinct muscular tension, contractures, and increased patella reflex, the latter being also seen on the sound side. Some children remain epileptic. Athetosis and associated movements are quite common. Sensibility is but little affected. Some children have disturbances in speech, and a few show distinct mental impairment. He considers that the gray matter of the cortex is attacked, and says that in some cases parencephalic defects have been found in the brain, with traces of former inflammation. He suggests that the disease may have an infectious origin.

Ranke[2] has recently reported nine cases in his own experience, in some of which he had made careful electrical examinations, finding a quantitative diminution of excitability, but never reaction of degeneration. In regard to other symptoms his observations agree precisely with Strümpell's.

Bernhardt[3] also reports eighteen cases, some of which were connected with a previous infectious disease. The symptoms agree for the most part with those described by Strümpell. He notes, however, that the hemiplegia follows on the convulsed side, or the most convulsed side if the convulsions are bilateral. Some children became absolutely dumb, or said only yes and no, although the hearing was perfect. All forms of aphasia in children, whatever their cause, pass off completely as a rule. In not a few cases of spastic hemiplegia the intelligence suffers; there are vertigo, epileptic attacks, a change in the emotional state, moral perversity, etc. In his cases the patellar reflex was not much increased on the paralyzed side. Associated movements are commoner because the basal ganglia are unaffected, and the impulse from the sound side can pass through the corpus callosum to them, reaching the still healthy tract below, while the disease checks the inhibitory action of the cortex on the affected side.

Other causes, however, may produce hemiplegia in a child, and are to be diagnosticated as in the adult. If, in a healthy child, we see unilateral and persistent convulsions, followed by hemiplegia, contractures, hemichorea, hemiathetosis, associated movements, etc., we may speak of a definite clinical type of disease, cerebral infantile paralysis. The process may be bilateral, with depression of the cortex, and it may be the cause of some cases of idiocy. It is not a poliencephalitis, as the cortex is not alone affected; furthermore, that is a name which Wernicke has previously given to degeneration of the nuclei of the oculo-motor nerves in the pons, leading to external ophthalmoplegia. It may be distinguished from acute anterior poliomyelitis by the presence of convulsions, fever, hemiplegia, facial paralysis, a normal or exaggerated patellar reflex, contractures, associated movements, aphasia, anasthria, dementia, and a change in character. There is also less atrophy and less defect in the development, and merely a quantitative diminution in the electrical excitability without reaction of degeneration.

In this connection, it may be of interest to refer to a case reported by Brinswanger.[4] The patient was imbecile and epileptic, and had attacks of maniacal epilepsy. The right arm was paralyzed and atrophic. The examination of the brain, which was very thorough, showed a parencephalic defect in the left side of the brain, involving the third (inferior) frontal, the lower and middle thirds of both central convolutions, the lower parietal (the supra-marginal and angular gyri), the first temporal, and the insula. The patient could talk a little, and this power, it was thought, might be due to the action of the right hemisphere.

[1] A. Strümpell. Ueber die acute Encephalitis bei Kinder. (Polioencephalitis acuta, cerebrale Kinderlähmung.) Deutsch. Med. Wochenschrift. Nr. 44, 1884.
[2] H. Ranke. Ueber cerebrale Kinderlähmung. Jahrbuch für Kinderheilkunde. xxiv, 1, 2. 1886.
[3] M. Bernhardt. Ueber die spastische Cerebralparalyse im Kindesalter (Hemiplegia spastica infantilis), nebst einen Excurse über "Aphasie bei Kindern." Virchow's Archiv., CII. p. 26, 1886.
[4] O. Brinswanger. Uebereinen Fall von Parencephalie, Virchow's Archiv., CII, p. 13, 1885.

FAITH HEALING AND KINDRED PHENOMENA.

Under this head, Rev. J. M. Buckley, D.D. a clergyman of the Methodist Episcopal Church, writes for the *Century Magazine*. These are his "inductions" from an exhaustive survey of the facts:

(1) That subjective mental states, as concentration of the attention upon a part, with or without belief, can produce effects either of the nature of disease or cure.

(2) Active incredulity in persons not acquainted with these laws, but willing to be experimented upon, is often more favorable to sudden effects than mere stupid acquiescent incredulity. The first thing the incredulous, hard-hearted man who believes that "there is nothing in it," sees that he cannot fathom, may lead him to succumb instantly and entirely to the dominant idea.

(3) That concentrated attention, with faith, can produce very great effects; may operate powerfully in acute diseases, with instantaneous rapidity upon nervous diseases, or upon any disease capable of being modified by direct action through the nervous or circulatory system.

(4) That cures may be wrought upon "diseases of accumulation," [sic] such as dropsies and tumors of various kinds, with great rapidity, where the increased action of the various excretory functions can eliminate the accumulations from the system.

(5) That rheumatism, sciatica, gout, neuralgia, contraction of the joints, *and certain inflammatory conditions* (?) may disappear under similar mental states suddenly, so as to admit of healthful exercise, which exercise, by its help upon the circulation, and through it upon the nutrition of diseased parts, may produce a permanent cure.

(6) That the "mind cure," apart from the absurd philosophy of the different sects into which it is already divided, and its repudiation of all medicine, has a basis in the laws of nature. The pretence of mystery, however, is either honest ignorance or consummate quackery.

(7) That all are unable to dispense with surgery, where the case is in the slightest degree complex, and mechanical adjustments are necessary; also that they cannot restore a limb, or eye, or finger, or even a tooth which has been lost. But in certain displacements of internal organs, the consequence of nervous debility, which are sometimes aided by surgery, they all sometimes succeed by developing latent energy, through mental stimulus.

Rev. Dr. Buckley concludes his article with the following words:

"That faith healers represent God as interfering constantly, not by cause and effect in the order of nature, but effecting the result directly. Their want of superiority to those who are not Christians, but use either false pretences or natural laws, condemns their pretentions. . . .

"Faith cures, technically so called, as now held by many Protestants, is a pitiable superstition, dangerous in its final effects. It may be asked, what harm can result from allowing persons to believe in 'faith healing?' Very great indeed. Its tendency is to produce an effeminate type of character, which shrinks from any pain, and to concentrate attention upon self and its sensations. It sets up false grounds for determining whether a person is, or is not, in the favor of God. It opens the door to every superstition, such as attaching importance to dreams, signs, opening the Bible at random, expecting the Lord to make it open so that one can gather his will from the first passage one sees, 'impressions,' 'assurances,' etc.

"Practically, it gives great support to other delusions which claim a supernatural element. It greatly injures Christianity by subjecting it to a test which it cannot endure. It directs attention from the moral and spiritual transformation which Christianity professes to work — a transformation which, wherever made, manifests its divinity, so that none who behold it need any other proof that it is of God. It destroys the ascendency of reason in the soul, and thus, like similar delusions, it is self-perpetuating, and its natural, and in some minds, its irresistible tendency is to mental derangement.

"Little hope exists of freeing those already entangled, but it is highly important to prevent others from falling into so plausible and luxurious a snare, and to show that Christianity is not to be held responsible for aberrations of the imagination, which belong exclusively to no party, creed, race, clime, or age."

Having given at some length the Rev. Dr. Buckley's view of mind curing, faith healing, etc., we are glad to quote from the most recent book by a prominent apostle of "mind curing," Mr. W. F. Evans, author of "Divine Law of Cure" and "Primitive Mind Cure," who treats his subject this time under the title of "Esoteric Christianity and Mental Therapeutics."[1] From this treatise we learn that,

"The fundamental principle in the practice of the phrenopathic method of cure is the recognition of the true idea of man as already in his true being an immortal spirit, and as such, exempt from sin and disease. In our conception of the patient we divest him of the material and astral envelope, and think of him not as about to be saved in some future time, but as *already saved*, so far as his true being is concerned. We, as it were, dematerialize him in our idea of him. Through the influence of mind upon mind, and in accordance with the law of thought-transference, this serves to dispossess him of the idea and belief of disease, and free him from his engrossment by the illusions of sense. It may be objected to such a method of mental cure, that it is too transcendental, and but a few are sufficiently unfolded spiritually to practice it with any degree of success. In reply we would only say that the intelligent force which creates and governs the world is transcendental; that is, it is purely mental and is beyond the grasp of the senses, but is none the less real and potential for all that. It is quite true that only a small number of persons are at present qualified to practise the system with marked success. But it has been our aim to educate men and women up to that degree of spiritual development that will greatly increase the number of successful practitioners. It may, in truth, be said of surgery, that only a small fraction of the twelve hundred millions of the human race are qualified to be eminently skilful surgeons. Yet that is no weighty objection to the modern science of surgery which is accomplishing such marvels in saving life. The good surgeon, like the poet, is born, not made. The same is true of the phrenopathic healer.

"In order to a successful practice of the mental-cure system, it is not necessary to deny the personality of God as some have done, and reduce him to an inconceivable sea of being, an ocean of spirit without bottom or shore. . . . Neither is it necessary to deny the personality and persistent individuality of the human spirit. Personality is not predicable of the body, for, as we have shown, the corporeal organism is not man. The mind or thinking principle is the man. . . . It is not necessary to deny the existence of matter, but only to affirm the sovereignty of mind over it. Matter exists as a mode of consciousness in us, and is as real as that mode of thought. So disease exists as a wrong way of thinking, and to change that way of thinking for the belief of the truth, is to cure disease of whatever nature it is. It is not necessary to tell a man, dying of consumption, that he is not sick, for that is not true. If he is not sick, why try to cure him? We would only affirm, and to

[1] H. H. Carter & Karrick, Boston, 1886.

possible, cause him to perceive, that the deepest reality of the disease is not physical but mental. By a fall on an icy sidewalk a man may break his arm or his leg. We would not cure him by denying the fact of his existence, or of the sidewalk, for there is no saving virtue in what is false. But recognizing both the fall and the fracture, we would affirm that the immortal man is not injured, and that no sooner was the wound made than an everywhere-present Divine Life goes to work to heal the hurt." [Sometimes with shortening and deformity.] "We would steadfastly believe this, and form in our mind the idea of the change to be effected in order to a cure, and aid nature by accelerating the curative process.

"To modify a patient's thinking in regard to himself and his disease, we employ the principle of suggestion or positive *affirmation* — not mental argument, as it is sometimes called, for argument creates doubt and reaction. No sick man was ever cured by reasoning with him, mentally or verbally. It is the business of the man who *knows* the truth, not to argue, but to affirm. . . . But the effect of suggestion is the result of the *faith* of the subject, for it is always proportioned to the degree in which the patient *believes* what you say. If the patient is disposed to believe you, the magnetic state is not necessary to the influence of your affirmations upon him. If he is not thus disposed, we employ silent or mental suggestion, and oftentimes with marvellous effect. In accordance with the law of thought-transference, and acting on the principle that ideas operate as causes, we form in our minds the idea of the change to be effected in the patient in order to the cure of disease. . . . In dropsy there is a suspended or defective action of the kidneys and sometimes of the skin. A cure cannot be effected by any therapeutic agent without a restoration of the kidneys to their normal functional action. In rheumatism there is also a defective action of the renal functions. Certain acids, as the lactic, the uric, and lithic acids are retained in the blood instead of being eliminated from it by the kidneys.

"In some cases of disease an increased or diminished action of the perspiratory glands of the skin is indicated as necessary, or an increased activity of some one or all of the excreting organs. Whatever the physiological change is which is demanded, the universal life-principle, which we call nature, is making an effort to effect it, and we may augment her curative endeavor by forming in our minds the idea of the change. Here knowledge is power, and we find medical science an auxiliary to the mental system of cure. And we would take occasion to remark, that no *intelligent* practitioner of the mind-cure will ignore wholly [*sic*] all medical science. Mind is the only active principle in the universe. The mind of a skilful surgeon performs marvels in saving the lives of people."

On still another page we are told that

"He who carefully studies that development of Christianity which we have in the writings of Swedenborg will find all the truth there is in the various schools of mental cure. . . . In the revolving wheel of life the early Christian method of cure by faith, and which through the prevalence of materialism and sensualism has descended to the bottom of the circle, is now coming uppermost again under the name of phrenopathy or mind-cure.'"

Thinking that some of our readers might still be curious about the mind-cure, which has, during the last year or two found its devotees, especially here in New England; thinking moreover that their conception of the system might possibly still be a vague one, and realizing that we ourselves were under a certain degree of bondage to the "dominant scientific materialism of the day," that we had not come to the perfect "knowledge of the real self, the immortal and undying Ego, the unchanging *I Am*," we have endeavored to draw enlightenment from passages found on the latest pages of a writer of a series of works on "Mental Therapeutics;" a practitioner who has used the principles he expounds for nearly a quarter of a century, principles which, he assures us, "may be viewed as established rules in the phrenopathic method of cure."

Should any of our readers suspect that the "thread of his verbosity is drawn out finer than the staple of his argument," we fear we can be of little further use to them.

THE POISONING OF A FAMILY BY "ROUGH ON RATS."

THE dangers incident to the at present unrestricted sale by grocers and others of white arsenic, in the form of "Rough on Rats," and the common use of this powder, thus placing it ready at hand for use by any evil-disposed person, was well illustrated in the case of the Blanchard family of Wilmington, an account of whose experiences has lately been published in the daily journals.

As it appears from the testimony given at the hearing before the court, the colored maid, of about fourteen years of age, who set the table for tea that evening, had been reproved by the mistress during the day for some neglect of duty. Of the seven persons who partook of the meal, all but two — and these children of some of the others, and not accustomed to take tea — were seized with nausea, vomiting, and the other symptoms of irritant poisoning, within five minutes after leaving the table. As these two had partaken of every other article, except the tea, suspicion was directed to that. When it was noted that the servant had not taken tea, as was her habit, and did not show any symptoms of sickness like the rest, suspicion rested upon her. While clearing off the table, she asked several questions as to whether if any poison had been put into the teapot, any of it would probably still remain there. During this discussion the interior of the pot was examined, and some white powder found upon the sides, so that it was set aside for further examination, she being ordered upon no account to touch it. Yet she did, when unobserved, remove it, rinsed and wiped out the interior of the pot, so that when again examined, nearly all the white powder had disappeared from where it was before seen.

The physician, when summoned, suspected the presence of arsenic poisoning, and gave proper treatment therefor. He made inquiries about the possible source of the arsenic; although none at first was thought of, the fact that a box of "Rough on Rats" had some weeks before been put away in the store-room, was at last remembered, and the box sought for, but found missing, although known to have been there but the day before. The next day it was found in another place. These and other facts led to the arrest of the maid upon suspicion of having added the arsenic to the tea.

Subsequent examination by a chemist disclosed the fact that the fluid decoction of the tea, as well as the tea-grounds and the interior of the teapot, especially of the spout, which could not be wiped out, all contained a large amount of arsenic, as did also the vomit of those who had partaken of the tea. Neither the

water from the well nor the unused tea contained any arsenic, but the dirty water found in a dipper upon the wash-stand in the maid's own room was found to contain some arsenic. The chemist testified that, from comparing the size of the whole crystals of arsenic composing the powder in the box of "Rough on Rats" with those found in the undissolved lump of white powder found in the spout of the pot, and the relative amounts of small, broken fragments found with each of them, that he was of the opinion that what was found in the teapot might have come from the box; that the difference between them, so far as there was any, was exactly what he would expect would result to powder from the box if it should be subjected to the action of boiling water such as the powder which was found in the pot must have been subjected to. These and some other facts presented to the court seemed to be sufficient cause for suspicion against the girl to cause her to be held for trial.

MEDICAL NOTES.

— The police authorities in Berlin have published an order requiring physicians to give written notice to the sanitary board within twenty-four hours after the diagnosis of the disease, in every case of puerperal fever, whether followed by death or not. The name of the midwife in attendance is also to be given.

BOSTON.

— The City Government in both branches has voted to accept the report of the joint committee on Public Health, appointed to give hearings on the existing regulations of the local Board of Health for the disinfection of foreign rags by a patent steam process. The report, which is a very sensible and judicious one, was accepted in the Common Council, notwithstanding the opposition of certain Democratic machine politicians, whose support can hardly be regarded as a *moral* endorsement of the action of the local Board of Health. We referred to this report, which should be read in full by all interested in the subject of rags as contagion carriers, in an editorial, September 2d.

NEW YORK.

— The King's County Insane Asylum, at Flatbush, is said to be in an extremely bad condition. In buildings which can accommodate fairly only eight hundred patients, there are now packed fifteen hundred; and on account of this disgraceful over-crowding, it is impossible for them to receive proper care, while they are in constant danger of the outbreak of an epidemic of infectious disease.

— Dr. Lewis H. White, for many years one of the leading physicians of Dutchess County, died of typhoid fever at his residence in Fishkill Village, September 24th, in the eightieth year of his age. His father was Dr. Ebenezer White, of Westchester County, whose two brothers, Barton and Harry, were also physicians, and he was graduated from the Medical Department of Yale College. He also received an honorary degree of M.D. from the University of the City of New York in 1835. He practised with great success for fifty-one years in Fishkill, where he was highly esteemed and beloved by the entire community, and where his son, Dr. Howell White, has for some time been associated with him. For eleven years he was President of the Dutchess County Medical Society.

Miscellany.

CONFERENCE IN WASHINGTON WITH REGARD TO THE FORMATION OF A CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

In accordance with a proposal emanating from the American Surgical Association, looking to the organization of a Congress of American Physicians and Surgeons to be composed from the principal specialist societies of the country, committees from the several societies appointed for the purpose met at Washington.

Among the gentlemen who appeared at the conference were the following:

From the American Surgical Association, Drs. C. H. Mastin, Mobile; J. Ewing Mears, Philadelphia. From the American Climatological Association, Drs. Frank Donaldson, Baltimore; W. W. Johnston, Washington. From the American Laryngological Association, Drs. F. I. Knight, Boston; E. L. Shurley, Detroit. From the Association of American Physicians and Pathologists, Dr. Wm. Pepper, Philadelphia. From the American Neurological Association, Drs. L. C. Gray, Brooklyn; J. Van Bibber, Baltimore. From the American Otological Association, Drs. C. R. Agnew, New York; W. H. Carmalt, New Haven, Conn. From the American Ophthalmological Association, Dr. O. F. Wadsworth, Boston. From the American Dermatological Association, Drs. H. G. Piffard, New York; G. H. Tilden, Boston. From the American Gynecological Association, Drs. S. C. Busey, Washington; J. R. Chadwick, Boston; Jos. Taber Johnson, Washington.

Dr. J. Ewing Mears was made Secretary, and Dr. S. C. Busey, of Washington, Chairman. A series of resolutions was adopted of which the purport was:

(1) That it was advisable to hold a conjoint meeting of the special societies in Washington during the month of September, 1889, and subsequently at intervals of three years.

(2) That the Societies be invited to elect each a representative to the Executive Committee of the conjoint assemblage, who are to have power to complete organizations by electing a President, Secretary and framing By-Laws, etc.

(3) That the conjoint meetings shall take place on two successive evenings, on the former there shall be an address, on the latter a topic for discussion.

(4) That in every respect the Societies shall retain their autonomy and carry out their own programmes.

(5) That any Society can withdraw at any time.

There was unanimity except that there was some discrepancy of opinion with regard to the frequency of the conjoint meetings. The majority favored *three* years, one or two favored intervals of five years.

The secretary was authorized to send copies of these resolutions to the several medical journals of the country.

Correspondence.

THE MEDICAL COLLEGE AND THE ROPER HOSPITAL AT CHARLESTON, S. C.

THE following letters, concerning the misfortunes in Charleston attendant upon the earthquake, and especially concerning the injuries suffered by the Medical College and the Roper Hospital, and which have been sent to the JOURNAL for publication, speak for themselves. It is only necessary to add that the letter from Dr. Kinloch was written in response to an earnest request from Dr. Bowditch, who is a member of the Boston Relief Committee, for a statement of the facts in the case.

ASHEVILLE, N. C., September 18, 1886.

MY DEAR DR. BOWDITCH, — The accounts given in the daily press regarding the destruction at Charleston, and the consequent suffering and prospective distress, have not in any way exaggerated the situation. The sympathy and generosity of the people of our broad country have touched the hearts of our people, and if, as it has been said, good often comes out of apparent evil, we all must recognize the great and lasting benefits coming now of a united brotherhood that knows no North, no East, no West, no South.

In calling your attention to the general condition of our afflicted city, I feel that I can add nothing to the picture as already drawn by so many of the witnesses upon the scene of trouble. In consequence of feeble health I have had to absent myself from home and to profit by a temporary sojourn in a mountain climate, but the daily communication had with my people enables me to speak as correctly as though I was upon the spot. As a medical man I am naturally much interested in the condition of the profession at home, and the destruction connected with our Medical College and our Hospital. I can give you some account of this, and leave you to consider our necessities. There are a few medical men who have suffered, and who can but poorly afford to lose anything. We are nearly all poor and dependent solely upon our daily work. The impoverishment of our city and State, incident to the unfortunate war between the States, has only in part been recovered from, and the consequence has been that even the medical men doing a good business have been but poorly remunerated. Medical fees cannot be large, and much charity practice has been done.

Our Medical College, as you know, is one of the oldest and most honored institutions of the country. Many of her Alumni are conspicuous and distinguished throughout the country. Since the war, with the multiplication of colleges at the South and West, we have had to depend almost solely upon the students of our own State. As one of the faculty of the college, I can say, without fear of contradiction, that we have been doing good work. We have upheld the good name of the school, have year by year been advancing the standard of education, and yet none of us have received remuneration worth mentioning. I have held on to my chair for many years simply because I felt a pride in keeping up the school which had been honored by a Dickson, a Moultrie, a Giddings, and a Gailliard. The college has no endowment, but had to be self-supporting. Now it has been practically destroyed by the earthquake, and will have to be rebuilt or suspended. We are told that it will be difficult to raise money by a loan and mortgage of the building, for such security would be poor. It will probably cost from four to five thousand dollars to enable us to go to work again.

Again the time-honored and noble institution, the Roper Hospital, upon which we depended for our clinical facilities, has been totally destroyed. This hospital was originally built through the charity of Mr. Thomas Roper. The Medical Society of our city were, under Mr. Roper's will, the trustees of the fund. The hospital was open to persons of all color and creed. With the bad fortunes of the war, this fund was so reduced that it was not sufficient to carry on the charity, and, as the next best thing to do, we, by permission of the courts, rented the building to the city, to be used as a hospital until our funds should reaccumulate, and allow us to open the building upon the former plan.

You will perceive, therefore, what an additional blow the Roper Fund has sustained. This charity is sadly in need of help. By the way, let me remind you that our old friend, Dr. T. Gailliard, together with myself, were the first medical officers appointed to this hospital. Dr. Gailliard had charge of the medical, and I of the surgical wards. We served long and pleasantly together. I am doubly interested in this charity, for it was through this that I acquired most of my surgical experience. Would that I had the means to richly endow it, and, in the evening of my life, to see the noble institution once more dispensing its rich blessings to all men who might stand in need of relief. I can say no more, my dear Doctor, after thus putting you in possession of the more important facts connected with our calamity, and which, no doubt, will interest you more particularly, as a medical man and a humanitarian. I say, in conclusion, God bless you for the interest you take in our affairs, and God bless the people of your noble city who have so generously responded to the wants of a suffering, but brave community. Inasmuch as you have done it unto the least of these, so sure will be your reward.

Sincerely yours, R. A. KINLOCH.

CHARLESTON, S. C., Sept. 15, 1886.

PROF. J. COLLINS WARREN.

My Dear Doctor,— Our Medical College, a self-supporting individual organization, dependent entirely upon its pupils, connected in no way with any city or State organization, is ruined, almost razed to the ground; our poor and helpless Faculty has determined to address prominent men in the profession throughout the States, to beg them to use their influence directly in aiding us to rebuild the old and venerable institution that has sent out such men as J. Laurence Smith, Marion Sims, Gaillard Thomas, and whose professional chairs have been filled by a Holbrook, a Dickson, a Shepard, an Agassiz, and others.

My dear Doctor, we are not ashamed to beg, and whatever you may do for us will be gratefully received and acknowledged by the Faculty and profession at large.

Yours most truly, M. MICHEL, M.D.

P. S. Make use of this letter among your colleagues, and ask them to help the old school.

INTRACAPSULAR FRACTURE.

EVERETT, MASS., September 20, 1886.

MR. EDITOR,— In your issue of August 26th, in page 191, I notice some remarks upon intracapsular fracture in the aged. Allow me to make a few suggestions in regard to this particular fracture.

Some years since, when examining a longitudinal section of the upper portion of a femur from the peculiar construction of the bone, I came to the conclusion, that, in a fracture of the neck from the usual accident, falling upon the trochanter with an impetus forward, the separation would commence at the upper surface, extending across until it reached the buttress of solid bone, when it would split down the entire length of this buttress and under the capsular ligament. This attachment of the fractured part to the capsular ligament by this fragment of the buttress accounts for the fact that there is but a slight shortening of the limb, rendering the result of the injury somewhat doubtful.

The surgeon in his manipulations to ascertain the character of the injury breaks up this connection; the limb being now released, is drawn up as far as the soft parts will permit.

If the limb is now drawn down the fractured surface of the femur comes in contact with that of the head and turns it down so that the femur only touches the upper edge of the fractured neck. The difficulty of a union in this situ-

ation amounts almost to an impossibility, whereas if extension had been made before the parts had been separated by the surgeon the fractured surfaces would have been brought in apposition, union would have commenced at the point under the ligament and progressed upward until a perfect recovery had taken place. In my work entitled "Conservative Surgery," this fracture is fully illustrated.

In the reduction of fractures and dislocations, I think, as a rule, too much force is used in the attempt to overcome the muscles. If the patient's mind is occupied by engaging him in conversation, and a very moderate amount of extension made, it will be found that the muscles will relax and the limb come down a short distance where it can be held by the surgeon and the moderate extension continued with the same result as before.

I will relate a case which fully corroborates this view. Some fifty years ago when assistant physician at Bellevue Hospital, New York, Dr. Wilson being resident physician, a patient in the Small-pox Hospital dislocated his shoulder. Dr. Wilson attempted its reduction, but did not succeed, and sent to the Middle House for assistance; Commodore McDonnough's son and I went to his aid. We all three made extension under Dr. Wilson's direction without affecting a reduction. Dr. Wilson then sent for the pulleys; while he was arranging these, I said to him that if he had no objection, I would try its reduction. He readily assented.

After removing my boots I placed one foot in the axilla, the great toe of the other foot against the process of the scapula, at the same time saying to the patient that he need not be alarmed as I was not designing to pull upon his arm, engaged him in conversation, and in two or three minutes the arm came down part way; in two or three minutes more it came down so that I felt the head of the humerus against the side of my foot, then with a push with both feet and bringing the arm into the side of the body the head was restored to its place.

I would call attention to the small amount of force used in this case to overcome the muscles. I will here remark that this case has long precedence of the one that Dr. Neil Macleod describes as a new method of reduction. I will relate a case in which reduction of a fracture was accomplished by a new process.

About forty-five years since I was called to see a young man who had fractured his femur at the upper third; there was a contraction of the lower portion of full two inches. He appeared to have a perfect horror of the suffering connected with setting a bone, and inquired very frequently if it would not "almost kill him when it was set." This suggested the idea of doing it without his knowledge; at the same time I recalled the fact that at the moment we drop upon the bed we relax all the muscles. Accordingly, when preparations were all made, I directed the assistants to hold him over the bed, taking charge of the fractured limb myself.

I put one hand under the place of fracture, the other clasping the knee, flexing the femur at the point of fracture for the purpose of opening the upper surface of the two ends. When all was ready I directed the assistants to lay him down. While he was being lowered I made extension from the knee and flexed still more at the fracture, bringing the ends of the bone in apposition, so that it was actually accomplished without his knowledge.

In this case but very slight traction was required, although the bones lapped over ten inches.

HENRY G. DAVIS, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 18, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	661	316	30.90	13 20	18.90	2.25	5.25
Philadelphia	971,363	—	—	—	—	—	—	—
Brooklyn	690,000	293	161	22.44	13.60	15.30	1.02	5.10
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	189	81	24.38	20.67	18.55	1.59	3.18
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	123	57	22.68	15.39	11.34	—	6.48
Cincinnati	325,000	99	41	26.26	15.15	9.09	3.03	11.11
New Orleans	238,000	108	33	18.40	13.80	5.52	.92	.92
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	91	34	15.26	14.17	7.63	3.27	2 18
Pittsburgh	190,000	81	49	15.99	4.92	—	4.92	1.23
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	—	—	—	—	—	—	—
Charleston	60,145	49	13	10.20	16.32	2.04	4.08	—
Worcester	68,383	16	5	25.00	18.75	12.00	6.25	—
Lowell	64,051	32	20	53.21	9 39	40.69	—	6.26
Cambridge	59,660	15	6	26.66	6.66	13.33	6.66	6.66
Fall River	56,863	23	13	43.47	8.70	26.10	—	8.70
Lynn	45,861	15	6	13.33	26.66	6.66	—	—
Lawrence	38,825	12	4	8 33	—	—	8.33	—
Springfield	37,577	15	5	39.99	19.99	26.16	6.66	6.66
New Bedford	33,393	17	7	17.86	17.86	5.88	5.88	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	14	—	7.14	—	7.14	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	7	3	57.12	14.28	42.84	—	—
Taunton	23,674	10	—	10.00	10.00	10.00	—	—
Haverhill	21,795	9	—	33.33	33 33	11.11	22.22	—
Gloucester	21,713	6	1	16.66	16.66	16.66	—	—
Brockton	20,783	10	4	40.00	30.00	10.00	20.00	—
Newton	19,759	4	2	25.00	—	25.00	—	—
Malden	16,407	10	3	40.00	10.00	30.00	—	10.00
Fitchburg	15,375	—	—	—	—	—	—	—
Waltham	14,609	4	1	—	—	—	—	—
Newburyport	13,716	3	1	33.33	—	33.33	—	—
Northampton	12,896	4	1	50.00	—	25.00	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 1,920: under five years of age 869: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 504, consumption 269, lung diseases 110, diarrhœal diseases 287, diphtheria and croup 86, typhoid fever 42, whooping-cough 30, malarial fever 29, measles nine, scarlet fever eight, cerebro-spinal meningitis five, erysipelas four, typhus fever one. From whooping-cough, New York 10, Brooklyn six, Baltimore and Pittsburgh four each, Washington three, Cincinnati, Charleston, Lowell, Lynn, Springfield and Chelsea one each. From malarial fevers, New Orleans 12, New York eight, Brooklyn three, Baltimore two, Boston, Charleston, Lowell and Northampton, one each. From measles, New York seven, Brooklyn two. From scarlet fever, Pittsburgh four, Cincinnati two, Brooklyn and Boston one each. From cerebro-spinal meningitis, Fall River, two, New York, Worcester and Brockton one each. From erysipelas, New York four. From typhus fever, Brooklyn one.

In the 21 cities and greater towns of Massachusetts, with a population of 990,728 (population of the State 1,941,465), the total death-rate for the week was 21.47 against 23.61 and 20.51 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending September 4th the death-rate was 20.8. Deaths reported 3,631: infants under one year of age 1,425; acute diseases of the respiratory organs (London) 128, diarrhœa 710, fever 58, scarlet fever 55, measles 46, whooping-cough 45, diphtheria 19.

The death-rates ranged from 14.2 in Bristol to 38.1 in Preston; Birmingham 23.5; Bradford 20.5; Brighton 20.6; Hull 16.6; Leeds 23.1; Liverpool 26.4; London 16.7; Manchester 28.8; Nottingham 18.2; Sheffield 28.2.

In Edinburgh 20.1; Glasgow 20.9; Dublin 26.2.

For the week ending September 4th, in the Swiss towns, there were 35 deaths from diarrhœal diseases, consumption 28, lung diseases five, whooping-cough and typhoid fever each three, diphtheria and croup two, erysipelas and puerperal fever each one.

The death-rates were: at Zurich 11.5; Geneva 14.1; Basle 14.1; Berne 13.9.

The meteorological record for week ending September 18, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
Saturday, Sept. 18, 1886.	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday, ..12	29.788	66.0	81.0	57.0	60.0	56.0	85.0	67.0	S.W.	S.W.	S.	6	20	15	F.	O.	R.	—	—
Monday, .. 13	29.898	61.0	70.0	56.0	78.0	34.0	50.0	54.0	W.	W.	W.	10	18	13	C.	C.	C.	—	—
Tuesday, ..14	30.041	65.0	74.0	52.0	63.0	44.0	73.0	61.0	S.	S.W.	S.	11	18	12	C.	F.	O.	—	—
Wednes.. 15	30.284	63.0	71.0	61.0	84.0	71.0	84.0	80.0	N.W.	E.	E.	3	15	11	C.	F.	C.	—	—
Thursday, 16	29.270	63.0	66.0	61.0	84.0	97.0	95.0	92.0	E.	E.	S.	14	15	10	O.	R.	O.	—	—
Friday, ...17	30.044	73.0	80.0	66.0	93.0	79.0	91.0	88.0	S.W.	S.W.	W.	8	14	12	O.	O.	O.	—	—
Saturday, .18	30.282	65.0	73.0	61.0	56.0	29.0	57.0	47.0	N.W.	0.	O.	21	16	0	C.	C.	C.	15.00	0.60
Mean, the Week.	30.085	65.0	73.6	59.1				70.0											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 18, 1886, TO SEPTEMBER 24, 1886.

FISHER, W. W. R., first lieutenant and assistant surgeon. Granted leave of absence for one month, to take effect September 10th, with permission to apply for one month's extension. F. O. 88, Department of Arizona, September 1, 1886.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING SEPTEMBER 18, 1886.

AUSTIN, H. W., surgeon. Granted leave of absence for thirty days, September 16, 1886.

GOLDSBOROUGH, C. B., surgeon. Promoted and appointed surgeon from October 1, 1886, to September 9, 1886.

YEMANS, H. W., passed assistant surgeon. Granted leave of absence for ten days, September 16, 1886.

BEVAN, A. D., passed assistant surgeon. Promoted and appointed passed assistant surgeon from September 1, 1886. September 7, 1886. Granted leave of absence for thirty days, September 7, 1886.

GLENNAN, A. H, passed assistant surgeon. Promoted and appointed passed assistant surgeon from September 1, 1886. September 7, 1886.

NORMAN, SEATON, assistant surgeon. To proceed to Vineyard Haven, for temporary duty. September 9, 1886.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, Monday evening, October 4th, 1886, at eight o'clock. Reader: Dr. M. F. Gavin, "A Case of Suprapubic Lithotomy." Also a paper by Dr. S. W. Langmaid.

37 Charles St. CHARLES P. STRONG, M.D., *Secretary*.

AMERICAN ACADEMY OF MEDICINE. — The American Academy of Medicine will hold its next annual session at Pittsburgh, Pa., October 12th and 13th.

RICHARD J. DUNGLISON, M.D., *Secretary*.

Lock Box 1274, Philadelphia.

DEATH.

Died in Lynn, Mass., September 23, 1886, John Sherman Emerson, M.D., M.M.S.S., aged fifty-four years.

BOOKS AND PAMPHLETS RECEIVED.

New Orleans Board of Health. Report on the Biloxi Fever. (Reprint.)

Report on Surgery. By G. L. Simmons, M.D., Sacramento, Chairman of Committee.

Zur Medicinischen Statistik. Von J. Apella. C. J. A., Dr. u. m. g. G. Mtgld. Berlin, 1886.

The Etiology and Treatment of the Summer Diarrhœa of Infants. By H. C. Haven, M.D., Boston, Mass. Philadelphia: John E. Potter & Co. 1886. (Reprint.)

Fifteenth Annual Report of the Managers of the Buffalo State Asylum for the Insane for the Year 1885. Transmitted to the Legislature January 15, 1886. Albany, 1886.

Report for the Year 1885-86, Presented by the Board of Managers of the Observatory to the President and Fellows of Yale College.

Surgical Notes from the Case Book of a General Practitioner. By William C. Wile, M.D., of Newtown, Conn., Fourth Vice-President of the American Medical Association. (Reprint.)

Ueber Bromismus nebst einem Falle desselben mit letalem Ausgange. Von Dr. Anton Eigner, em. Sekundararzt erster Klasse des k. k. allgem. Krankenhauses in Wien. 1886.

Rheumatism, its Nature, its Pathology and its Successful Treatment. By T. J. Maclagan, M.D. New York: Wm. Wood & Co. 1886.

Transactions of the Medical Association of the State of Alabama. The State Board of Health. Organized 1847. Session of 1886. Anniston. April 13-16, 1886. Montgomery, Ala.

Operations on the Drum-head for Impaired Hearing; with Fourteen Cases. By Seth S. Bishop, M.D., of Chicago, Attending Surgeon to the Illinois Charitable Eye and Ear Infirmary, and to the South Side Free Dispensary. Chicago. 1886. (Reprint.)

Cocaine in Hay Fever. A Lecture Delivered at the Chicago Medical College. By Seth S. Bishop, M.D., Surgeon to the South Side Free Dispensary, and to the Illinois Charitable Eye and Ear Infirmary; Member of the American Medical Association. Chicago. 1886. (Reprint.)

Original Articles.

NOTES ON SYPHILIS OF THE NERVOUS SYSTEM.[1]

BY JAMES J. PUTNAM, M.D.

THE DIFFERENTIAL DIAGNOSIS OF SYPHILIS AND TRUE EPILEPSY, IN PERSONS OVER THIRTY YEARS OF AGE.

The French syphilographer, Fournier, declares[2] that he has never seen a case of so-called idiopathic epilepsy beginning after thirty years of age, and that nine out of ten cases with this history are cases of syphilis.

This statement has often been quoted with approval, and is endorsed by H. C. Wood in his recent article.[3] It is supposed that in these cases the epileptic (properly epileptiform) attacks are only symptomatic of actual organic changes in the brain, but in another place Fournier offers the further opinion[4] that even in the early stages of syphilis functional derangements of the nervous system may show themselves, under the form of epilepsy, without organic lesion of the brain, and this view is likewise shared by other writers.

Other excellent and experienced observers, such as Strümpell[5] and Gowers,[6] consider it far from proved that syphilis is a cause, much less a frequent cause, of true epilepsy, although, in common with other organic brain diseases, it is a frequent cause of epileptiform convulsions.

According to the printed tables, including that of Gowers, it would seem that true epilepsy beginning after the age of thirty, although uncommon, is not so rare but that either Fournier's statement is in great exaggeration of the truth, or else cases are classed in them as epilepsy, which should come under the heading of symptomatic epileptiform convulsion; or else, finally, syphilis is a cause of true epilepsy oftener than is usually supposed.

Out of about 320 cases of epilepsy (or epileptiform convulsions of more or less chronic recurrence) which I find on my private and hospital records, there are forty-seven in which the first attack occurred when the patient was thirty years or more of age.

Of these, fifteen had to be counted out for want of sufficient record. Of the remaining thirty-two, sixteen had a pretty distinct syphilitic history, or offered present signs of syphilis; another patient was the wife of a syphilitic husband; two others had had gonorrhœa; and two admitted promiscuous sexual intercourse, though not syphilis.

One case was apparently of alcoholic origin; two were due to lead; and one to chronic gross disease of the brain. Excluding these last four cases, there were but six in which the history afforded no grounds for suspicion that syphilis might be present, and several of these were women, who are often infected by their husbands without their own knowledge.

Several of these six cases, on the other hand, seemed fairly to be called idiopathic epilepsy. One was that of a woman of excellent health, and over thirty years old, who was working in the Pemberton Mills at Lawrence at the time it fell in ruins, and was somewhat bruised and very severely frightened. An epileptic attack occurred that night, and they had recurred regularly during the twelve years preceding her examination. In two other cases the patients were under observation for a considerable length of time and no suspicion of syphilis was aroused. The other three cases were seen but once or twice, but gave a non-syphilitic history.

It is now worth while to see how far the other means of making the differential diagnosis would help us in deciding as to the doubtful cases in these three groups.

It is well known that inasmuch as syphilis usually causes epileptiform attacks by direct irritation of the cerebral substance, as any other organic intracranial disease might do, the fits ordinarily differ, in one or another respect, from those of the typical epilepsy.

Thus, consciousness is less apt to be fully lost, and the localized sensory or motor symptoms, such as are apt to usher in true epileptic attacks, may constitute the whole of the seizure.

Furthermore, the syphilitic patient is usually suffering from the constitutional effects of his disease, which may show itself in impaired nutrition, or in headache, vertigo, sleeplessness, and the mental deterioration and irritability so often met with in cerebral syphilis and especially significant if occurring at a period too soon after the appearance of the epileptic symptoms, to be considered as parallel to the mental deterioration of true epilepsy.

Again, there are often physical signs, such as enlarged post-cervical or epitrochlear glands, ulceration of mucous surfaces, alopecia, etc., which contribute to make the diagnosis presumptively certain. Finally, the crowning evidence is often furnished by the test of treatment. The question is, however, whether cases do not arise, and not so very infrequently, in which all of these signs fail, and yet where, on the evidence furnished by the age of the patient alone, we ought to use an anti-syphilitic treatment, and to persist in it in spite of the non-appearance of any great improvement, for the sake of avoiding possible future complications.

This last point is especially worthy of consideration. It is so common to hear the influence of anti-syphilitic treatment, often truly marvelous, spoken of as furnishing the touchstone of the diagnosis, that it is worth remembering that in the first place the eventual prognosis of nervous syphilis, under the best of treatment, is apt to be painted as too favorable; and in the second place, that, as Gowers has pointed out, while many of the symptoms such as headache, paralysis, etc., usually imply progressive advance of the disease, the mere presence of old or stationary disease, or of organic changes held in check by treatment, may furnish the irritation or instability necessary to keep up the epileptiform seizures.

Several of the cases which I believe to have been of syphilitic origin continued to have epileptiform attacks for a number of years, that is, as long as they were under observation, without showing any evidence of advancing disease.

A lack of susceptibility to large doses of iodide of potash is usually considered as an almost conclusive test of the presence of a syphilitic taint,[7] but I think the value of this sign is overrated.

[1] Read at the meeting of the Boston Society for Medical Improvement, May 24, 1886.
[2] Syphilis du cerveau, 1879.
[3] Pepper's System of Medicine, Vol. v, p. 1010.
[4] Annales de Dermat. et Syph. 1880. pp. 160-169.
[5] Spec. Pathol. and Therap. V. II, p. 376.
[6] Epilepsy, 1881.
[7] Compare. H. C. Wood. loc. cit. Pepper's Syst. of Med. Vol. V

I have recently been treating a patient with a sarcomatous tumor of the brain who took without difficulty 90 to 100 grains daily, and on the other hand I have seen a syphilitic patient who afterwards took enormous doses perfectly well, made uncomfortable at first by a small dose.

The truth in the matter is probably expressed in the following quotation from Brunton:[5]

"These symptoms (irritation of the mucous membranes, etc.), are most readily produced by small doses of two to five grains, and they may usually be arrested either by discontinuing the medicine or increasing the dose. When the dose is raised to ten grains the symptoms usually disappear, and I have only seen one case in which they persisted after the dose had been raised to thirty grains."

In other words, large doses, except perhaps at the very first, are better borne than small, and this observation I have heard confirmed by other physicians, though it has not found it way into the text books.

(To be continued.)

NOTES ON THE LAWTON MURDER.[1]

BY WILLIAM H. TAYLOR, M.D., OF NEW BEDFORD, MEDICAL EXAMINER.

On December 23d, 1885, at 9.30 o'clock, A.M., I was notified that the body of a man was lying in a wagon at Plainville, about three and a half miles from New Bedford, and that the surroundings indicated a violent death. As soon as possible I went to the place, arriving about ten minutes after ten, and found an express wagon, furnished with sideboards, drawn up to the wall at the north side of the road. This road, followed west, leads to Fall River, and in its easterly course passes through the towns of Acushnet, Rochester, Marion and Wareham. The wagon was a brown one with yellow trimmings and red wheels. The dashboard, footboard, thill, axletree, whiffletree and wheel on the right side were plentifully covered with recently dried blood. On the tailboard were two bloody smooches as though produced by bloody hands in closing the board. The board which ordinarily served to increase the height of the tailboard was missing, and was afterward picked up on a road in Rochester. The hind axle was badly sprung. Attached to the wagon was a dark chestnut horse with sweat dried on him, and evidently weary and hungry. The wagon contained a dozen or so of wood-colored boxes of the capacity of half a bushel each, and having the name "Lawton" on them in stencil. Seven of these boxes were closely stowed in the forward part of the wagon and contained eggs, one of the eggs being broken. The balance of the boxes were empty, and were piled helter skelter on the body of a man which was lying diagonally across the floor of the wagon, the head to the right near the tailboard, and the feet projecting five or six inches over the left sideboard, well forward. Before the removal of the boxes, it was noted that the wagon contained a small Japanese wolf-robe (lined with brown cloth and smooched with blood which had evidently undergone attempts at removal) and a horse-blanket, red and white checked, old and worn. A number of the boxes having been removed, the body came into view. It was that of a man thirty-five to forty years of age, rather below the medium height. The left side of the face was covered with dried blood into which dirt, and a few small, dry, brown leaves were matted, the leaves resembling those of the box-shrub. Numerous wounds were seen on the left side of the face, five being of special prominence.

At the back part of the head a wound was found from which blood was oozing on the bottom of the wagon. The body was not quite cold. Rigor mortis was observed in the legs only. About the neck was an old tarred hemp line as large as an ordinary clothes-line, which was tied in a "granny" knot on the right side, and had the appearance of being doubled. This rope had a long free end, and exercised no constriction on the neck. The clothing consisted of a brown mixed overcoat, blue undercoat, red cardigan jacket, dark vest, white shirt and paper collar, gray mixed trousers, underwear and stockings and black cloth boots, quilted. On the hands were brown leather gloves, well worn and bloody. All the clothing was blood-stained except the cardigan jacket, underclothes, stockings and boots. The boots were not muddy, nor was there any mud on the clothing except a spot on the back of the overcoat where it had laid on the floor of the wagon. (The day was warm for December, and the roads very muddy.) In the pockets were found a cigar, a few matches, a white handkerchief and a few worthless coins, but not a cent of current money. The inspection having been completed the body was arranged in the wagon and the whole affair was sent to the morgue in New Bedford under charge of a policeman. The body was identified on the spot, by a gentleman who well knew deceased and his habits, as that of Richard N. Lawton, of Westport, Mass., by occupation a collector of eggs in the towns of Wareham, Rochester and Dartmouth. He gave valuable information as to Lawton's probable whereabouts at the time of the murder, judging from the quantity of eggs which the wagon contained, and also stated that money in some quantity should have been found in the pockets. Inquiry along the road developed the fact that several persons had seen the wagon go by at daybreak, and almost all stated that the driver was a shortish man, with a black or dark mustache. This information, collected on the spot, probably assisted greatly in the speedy arrest of the criminal. A case of murder and robbery with subsequent transportation was readily made out.

An autopsy was held at 4.05 P.M., December 23d, at Wilson's morgue. After calling attention of witnesses to the position and appearance of the body as required by law, the examination proceeded. The body was that of a well-nourished and muscular man, five feet six inches tall, and would weigh about one hundred and thirty pounds. Very little rigor mortis, if any, was present. An evacuation of the bowels of ordinary appearance had occurred. Clothing was as before described. Subject had a brown mustache, and brown curly hair with a tendency to baldness at the forehead. A piece of tarred hemp line was removed from the neck. It was eighteen feet long, and had a standing bowline tied in the end giving the appearance of a double rope around the neck. The knot was situated just to the right of the median line of the chin, and, upon testing it, the rope did not slip. Three

[1] Read at a meeting of the Massachusetts Medico-Legal Society, June 8, 1886.

[5] Pharmacology, Therapeutics, etc. 1885. Lea Bros. p. 519.

fingers could be easily passed between the rope and the neck, and no furrow could be found on the skin indicating constriction. No marks of violence could be found externally, except upon the head. Post mortem ecchymoses were slight. Blood was dried in the ears, nose and mouth. The left side of the face was covered with dried blood containing dirt and a few small leaves. There were ecchymoses under both eyes. At the back part of the head on the right side near the median line, three and a half inches from the margin and just below the level of the top of the right ear, was a wound one inch by three quarters of an inch with ragged margins, from which blood oozed. On washing the face, no powder brand, burnt powder, or traces of wadding could be found. No wadding was found about the body or wagon. Five large wounds were situated in the space bounded by the left ear, angle of the mouth, lower jaw, malar bone, and zygomatic arch. The largest of these wounds was half an inch in long diameter, the smallest, a quarter of an inch; the remainder were between these sizes. The edges of these wounds were slightly blackened and were sharp cut. Beside these wounds there were forty or fifty small shot wounds scattered over the left side of the face. Only one shot wound was found to the right of the median line, and that was on the forehead. Several small shot wounds were seen under the chin on the left side. No wounds were found back of the left ear on the left side of the head. The small shot cut from these wounds were number seven or number eight bird-shot.

Section of the body showed that the heart was empty and contracted; the valves and walls were normal. The lungs were non-adherent, slightly emphysematous at apices, and generally anæmic. Ordinary post-mortem staining radiated outward from the bronchi to the surface. There were no sub-pleural ecchymoses. The bronchi of both lungs contained coagulated blood without froth. The larynx and trachea were normal. No ecchymoses were visible, and no evidences of pressure. The tongue was brown from dried blood. The hyoid bone was uninjured. There were no marks of pressure in the structures surrounding the larynx and trachea. Two buck-shot were found lying loosely in the pharynx; they had produced no injury at the site in which they were found. The liver, spleen, pancreas, kidneys, bladder and alimentary canal were normal. The stomach contained half a pint of partly digested food, in which could be distinguished beef, fowl, bread, potato, and other matters. The small intestine was the receptacle of matters which had undergone stomach digestion. The colon contained normal fæces.

The skull was extensively fractured. The charge of shot had torn through parts of the left temporal and sphenoid bones, breaking them into fragments, and carrying them into the brain. The ascending ramus of the jaw was fractured. The body of the sphenoid was fractured. Fractures radiated in all directions from the foramen magnum. A large, transverse fracture passed through both parietals at their back part, both temporals in the petrous portion, and the basilar process of the occipital. Around the wound of exit, the occipital bone was shattered to bits. Two buckshot were found at the wound of exit. One lay just inside the skull, and one, much flattened, was between the scalp and the skull. These buck-shot, and those found in the pharynx, were weighed, with the following result: The flattened shot weighed forty-seven grains, Troy; the others, thirty-eight and a half, forty-one, and forty-one and a half, respectively; total, one hundred and sixty-seven grains. The left internal and external carotid and basilar arteries were torn across, and the veins at the side of the neck, and the sinuses of the skull were freely opened. The large wounds of the face communicated directly with the interior of the skull through the sphenoid and temporal bones. Three fingers could be passed from the interior of the skull through this opening into the wounded region of the face. The right posterior lobe of the cerebrum was lacerated. The cerebellum was badly torn, the left hemisphere being nearly detached, and the right much lacerated. The medulla oblongata was cut through just below the olivary bodies. The spinal cord was normal. A blood-clot extended between the dura mater and the cord, from the foramen magnum to the second lumbar vertebra. The body was generally very anæmic.

Before discussing the points arising from the view and autopsy, it may be well to give an outline of the story of the murder, as brought out by the evidence accumulated by the police, and offered at the trial of Samuel F. Besse, for the killing of the man who furnishes us with the material for this paper.

Richard N. Lawton, a quiet, inoffensive man of unexceptionable habits and character, left his home in Westport, on Monday, December 21st, 1885, to take his usual route to Wareham and back, collecting eggs. He had with him probably between two and three hundred dollars. He arrived at Wareham that evening, and was seen by various persons. He passed the night at the house of Mrs. Long, who gave him his breakfast at about 8 o'clock A. M., Tuesday, and he then started to collect eggs. He called at a number of houses, as was his custom, and, about half-past ten, left the house of Mr. Handy to go to South Wareham by a wood-road which was uninhabited for some distance, and led past Blackmore's Pond. No one, except his murderer, ever saw him alive afterward, and the next that was known of him was the discovery of his body in Plainville, on Wednesday morning, fifteen or sixteen miles from Mr. Handy's house. Samuel F. Besse, the convicted murderer, was a desperate character, living with his father in a miserable hovel and a wretched neighborhood, in South Wareham. The locality bears the fitting name of "Hogtown." He had spent a long term in State Prison for burglary, and was a terror to the neighborhood. He knew Lawton's habits and the fact that he carried money with him, and it was known that he had contemplated robbery of this man for some time. On Tuesday morning, December 22d, he left his home about eight o'clock, taking his gun and buck and bird-shot of precisely the same character as those found in Lawton's head.

He waylaid Lawton as he came down the road from Handy's, and, secreting himself in the thick bushes at the side of the road, shot him. The location was determined by finding a cushion and whip belonging to Lawton near by, and upon assuming a position which it was reasonable to suppose was Besse's at the time of firing, the direction of the charge could be traced by the cut twigs of trees and bushes, and blood scattered about. Immediately after the shooting, the horse started, but, in sheering out, brought up on a tree-stump or log, which sprung the hind-axle. Besse caught him and turned him into the short scrub-oaks at the

side of the road, and, making evidence for his conviction by scrubbing the shrubs and small trees in his haste, and leaving the marks of uneven wheels on the ground, he found a good-sized tree some distance in from the road, in an unfrequented place, and tied the animal to it. This was shown by the tree being gnawed, the ground stamped and pawed, horse-droppings lying about, and a box, completing, with those found in the wagon, the original number which Lawton had on leaving home.

A most important witness for the prosecution was one Westgate, a companion of Besse's (as far as he thought prudent to be), who, at the time of the murder, was looking after some traps on the Weweantit River, an outlet of Blackmore's Pond. He was about a quarter of a mile away through the woods. He says he heard a team coming down the road, and voices. Then he heard two shots and some shouting. He looked after a few more traps, and then made his way to the road, where he met Besse. He inquired of Besse whose team it was that passed down the road, and what he fired at. Besse replied that he had seen no team, and that he had just shot a rabbit. After a little conversation on general topics, Westgate went home, leaving Besse in the road. Besse arrived home shortly after noon, and, having made some purchases, proceeded to devote his time to drinking.

He spent the first part of the night at a neighbor's, sleeping in a chair. About 3 o'clock A. M., Wednesday, he left the house, and, going to the place where the horse was secreted, he arranged his load, and, mounting the vehicle, urged the horse at as rapid a pace as possible through the various towns to Acushnet. As he entered Acushnet, still intoxicated, day was breaking. Several people saw him, marked his intoxication and his strange load, and one or two spoke to him. As he gained the country beyond Acushnet he met more people, and, concluding probably that the region was rather populous, he deserted the horse and wagon, and made his way through the woods and fields to New Bedford, where he was seen between eight and nine o'clock. A trifle of cunning seemed to remain in his intoxicated brain, for he went over to Fairhaven (across the river from New Bedford) to await the arrival of the morning train from the Wareham region, before showing himself publicly in New Bedford. While waiting for the street-car coming from the depot, he sat in an opening of a broken fence in a drunken sleep, and was seen by a number of passers-by. About noon he returned to New Bedford, and spent money freely for clothing, liquors, and other articles, and at four o'clock took the train to Wareham, his drunken state attracting the attention of the conductor.

On Thursday night, December 24th, he was arrested at a neighbor's house on suspicion, and in a short time evidence of the most convincing character fastened the crime upon him. He was tried at a special session of the Supreme Judicial Court at Plymouth, in May, 1886, and convicted of murder in the first degree. In this brief and condensed statement of fact, no special reference is made to the large amount of testimony necessary to establish the main facts as well as those of secondary importance; nor does the evidence concern us particularly as medical men except in so far as it has a bearing on the points having medico-legal interest.

At the preliminary hearing at Wareham, shortly after the murder, and at the hearing before the grand jury at Plymouth, the medical evidence was quite fully given. At the trial, however, very little work was given to the medical examiner. The defence admitted the cause and manner of the death without question, and the conversational powers of the witness received very little encouragement. But a very few questions involving statement of opinion were asked.

In preparation for the trial, quite a number of questions worth looking at presented themselves to my mind, and may be of interest to others.

I. How long had this body been dead when found at ten minutes past ten on the morning of December 23d? The body was not quite cold, and the only rigor mortis observed was a slight amount in the legs. According to our best authorities, the body cools in fifteen to twenty hours, the process being governed by the temperature of the surrounding medium. Under favorable circumstances it may be delayed to forty-eight hours or more. Warm weather, thick clothing or coverings, and a large quantity of subcutaneous fat favor slow cooling. Cooling is hastened by slight coverings, cold weather, leanness and death by hæmorrhage. Lawton's body was lightly covered, the clothing being open to the shirt. The temperature of the air was a little above freezing. He was not fat, and he had died with extensive hæmorrhage. And yet his body was not cold, though he must have been dead twenty-three hours when I saw him. Rigor mortis usually begins at the third or fourth hour, and is complete at the fifth or sixth. Exceptionally it may be complete as early as the second hour or as late as the thirteenth. No case has been reported in which its appearance has been delayed beyond twenty-four hours. It passes off in twenty-four to thirty-six hours in summer, thirty-six to forty-eight in winter. Exceptionally it lasts only two or three hours, and may possibly continue as long as three weeks. It appears first in the muscles of the face and neck, then in those of the trunk, and finally in the arms and legs. It passes off in the same order, the legs being the last to yield. In sudden death with no fatigue and with hæmorrhage, rigor mortis is apt to come on slowly and last a long time. This was the case with Lawton, and yet we find him lacking rigor mortis except in the lower extremities. It was reasonable to believe that rigor had come on and had been broken up by handling the body and jolting it about in the wagon. To be sure of this, I had the body carefully watched by the undertaker after it had passed from my hands. No rigor appeared. From the state of the body I did not feel warranted in approximating closely to the time of death, and gave as my opinion the statement that the body had been dead not more than thirty hours.

II. What was the cause of death? Three causes, either capable of producing death were evident. Shock, hæmorrhage, and section of the medulla oblongata. As the death was instantaneous, the last cause must have been the most important. How do we know that his death was instantaneous? This promised to be a point of some importance, but did not come up at the trial. As far as we know of instantaneous death, section of the medulla oblongata gives us the typical example. Again, the absence of froth in the bronchi, and the undisturbed coagula therein, showed plainly the method of death. Lawton's respiration ceased instantly. The heart continued to beat and pump the blood from the body as long as any came to its cavi-

ties, and finally stopped in systole. Had he breathed after being shot, we should certainly have found frothy, bloody liquid in the air-passages.

III. Could he have died from any other cause than gunshot wound of the head? What had the rope about the neck to do with his death? Fortunately, the answer is an easy one. Not one single symptom of death by asphyxia was present. The trachea and larynx, as before stated, showed no trace of injury, unusual redness or ecchymoses. The structures of the neck were normal. No furrow was found in the skin of the neck; no froth or frothy liquid in the air-passages; no congestion of the internal organs. It might be of importance to say that he was not hung first and shot afterward. Had this improbable state of things happened, we should still have had congestion of the abdominal organs, as the wounds of the head, at most, would have emptied only the vessels of the head and upper extremities. The generative organs showed no evidences of anything unusual, and the tongue was not swollen or indented. What the rope was used or intended for, must remain a sealed book, unless the convicted man sees fit to tell his story.

IV. From what direction and at what distance was the fatal shot fired? How can we connect the murderer with the missiles found in the body? The small shot wounds formed an ellipse, in the centre of which were the large wounds. These wounds were all on the left side of the face, some under the chin, but none back of the ear. The charge passed through the left temporal and sphenoid bones, along the base of the skull, and emerged a little to the right of the median line at the back of the head. It necessarily follows that the charge must have come from in front, somewhat to the left, and a little below the plane of the base of the skull. It is probable that Lawton was riding slowly along with the head slightly bent downward.

Authorities, surgical and medico-legal, are by no means agreed as to the appearances of wounds of entrance and exit. In most surgical works the dogma is maintained that the wound of entrance is always smaller than that of exit. As the other extreme we find Casper, who is equally dogmatic in the assertion that the wound of exit is always the smaller. Ogston, Taylor and Tidy recognize that many circumstances influence the appearance of these wounds, and that each case may present features peculiar to itself regarding the relative size of the two wounds, and the degree of inversion or eversion, laceration, and so on. Had any question arisen in this case, the fact that fragments of the temporal bone were found in the brain near the wound of exit would have settled the matter.

Westgate says he heard two shots. If two were fired, one only could have struck the murdered man. I conceive it to be next to impossible for a gunner to put two charges into a moving object in exactly the same relation. Again, had the first barrel missed, the victim would certainly have been disturbed and would have changed the position of his head. With regard to the distance at which the shot was fired, I have made some experiments with an old-fashioned muzzle-loading fowling-piece with very long barrels, which I knew to be capable of carrying shot very closely. In trying to obtain a powder-brand I used two and three-quarters drachms of rifle powder, at various distances. Briand and Chaudé, quoted in Medical Examiner Fish's admirable paper on pistol shot wounds,[2] state that powder-brand can be obtained at a distance equalling the length of the gun-barrel. Casper puts it at three or four feet, and Ogston, quoting Lachése, gives about the same figures. I was unable to get a powder-brand in the open air at a greater distance than two and a half feet; I certainly could not obtain one at the length of my gun-barrels, nearly three feet.

Partly burned powder would stick in bibulous paper in the open air at about eight feet; whether it would adhere to the human skin at that distance, I do not know. Wadding of good tough paper, well rammed, will be thrown twelve to fifteen feet against a slight breeze, and eighteen to twenty feet with the breeze. With my gun, loaded with two and three-quarters drachms of powder, one ounce number seven bird-shot, and twelve buck-shot, I could make a target closely resembling that on Lawton's head at twenty-five feet. Besse's gun was an old-fashioned double Manton with shorter barrels than mine and would probably not carry as closely. I put his distance from Lawton, at the time of firing the fatal shot, at eighteen to twenty feet.

In Besse's game-bag were found No. 7 bird-shot and 41 buck-shot, which, it was shown, he had purchased within a few days. The buck-shot were divided into groups of four, taken at random, and weighed by Professor Babcock, of Boston, who found that the fours averaged about a hundred and seventy grains. Some fours went as low as one hundred and sixty-three grains, and one, at least, over one hundred and eighty. As before stated, the four which I removed from the head and throat weighed one hundred and sixty-seven grains. An ounce of No. 7 bird-shot I found to contain from three hundred and fifty to four hundred, which would give a plenty to make the wounds on Lawton's face, as well as to cut the twigs of the trees and bushes in the line of fire. The method of loading is characteristic of an ignorant gunner, many men of this class having a belief that buck-shot will carry closer when backed by a charge of small shot.

Certain stains were found on the front of the legs of Besse's trousers. These had been subjected to attempts at removal, but not efficiently enough to ruin them for examination. The police sent these trousers, as well as a pair of boots worn on the night of transportation of the body, to Professor Babcock, of Boston; consequently, I did not see them until the day of the trial. Professor Babcock was fortunate enough to obtain the articles early enough to find blood-corpuscles in the stained places, and gave the very just and scientific statement that the blood was that of a mammal, that there was nothing inconsistent in the view that it was human blood, or that it was the blood of a rabbit. Certainly, where stains are sufficiently recent, the finding of corpuscles is the most conclusive test possible. I am inclined to think, however, that the time in which corpuscles can be distinguished in a blood-stain is shorter than is generally supposed, and I should place little reliance on observations made beyond a week or ten days. Some difference of opinion exists between authorities as to the value of the spectroscope in examination of blood-stains. Tidy is very enthusiastic in its favor, considers it infallible, and claims to have produced a characteristic spectrum from a stain

[2] Transactions Mass. Medico-Legal Society. Vol. I, p. 285.

known to be over one hundred years old. Others are more conservative, and still others assert that it is inapplicable in very many cases, requiring a good deal of technical skill, and, even in the best hands, proving unsatisfactory. I am not prepared to accept this last view. What little work I have had opportunity to do with blood has prepossessed me in favor of spectrum analysis, and, as it seems the only certain test, where it *is* clear and unmistakable, I think that hard work is well repaid which renders a man familiar enough with blood-spectra to be certain of their recognition.

Perhaps the best method to pursue with a blood-stain on cloth is that proposed by Ogston, which I will quote, with slight modification:

"The stained portion of the cloth is to be cut out and suspended by a fine thread in a test-tube containing distilled water. If the stain is from blood, the coloring matter will detach itself from the cloth in the form of reddish striæ, and collect at the bottom of the tube, while the water will there assume a red color, more or less pronounced.

"(1) A portion of the contents of the tube may now be used for the spectroscope.

"(2) Two or three drops of the fluid from the bottom of the tube may be cautiously withdrawn by a pipette, and examined under the microscope for blood-disks, epithelial-scales, or fragments of capillary-tubes.

"(3) Two or three more drops similarly withdrawn from the bottom of the tube may be placed on a slide, glacial acetic acid and a very minute crystal of common salt added, left to spontaneous evaporation, or gently heated, and when dried, examined by the microscope for crystals of hæmatin.

"(4) A little of the fluid may be dropped on bibulous paper and submitted to the guaiacum test.

"(5) A little more of the fluid, after the addition of ammonia, may be watched for any change other than a heightening of its color. If the red color comes from vegetable matters, it will be changed to blue, green, and so on.

"(6) The remainder of the fluid in the tube may be now heated, without or with nitric acid, for albumen, which, if present, will render it milky, or throw down a coagulum from it of a dirty gray color, leaving the water without a trace of red.

"(7) The turbidity or coagulum, if from albumen, will disappear or be re-dissolved on the addition of caustic potassa, and assume a brownish-red by reflected, and a green color by transmitted light.

"(8) When the stain has arisen from a layer of blood of perceptible thickness, the cloth, after the maceration, may exhibit a soft, white, grayish or rosy adherent matter, which, when removed and placed under the microscope, will prove to be the fibrin of the blood."

— The *Medical Record* speaks of a curious attempt at deception in a Russian peasant woman, who desired to pass off an infant as her own. In order to make it appear that she had just been delivered, she procured the lung of a sheep to answer as a placenta, and the seminal duct of a goat to represent the umbilical cord. The deception was discovered by Dr. Solovjeff, who related the case in the *Volkhski Vestnik*.

A FEW ADDITIONAL NOTES ON PSORIASIS.[1]

BY F. B. GREENOUGH, M.D., OF BOSTON.

The few notes that I have made on the cases of psoriasis that have come under my observation during the past dermatological year, hardly merit the title of a communication to the Association. I had hoped that some paper on this subject would be read, which would permit me to say the few words I wish to during its discussion. As, however, none such has been presented, I am forced to give you the results of my year's investigation on this subject, brief as they are, which briefness may perhaps be their greatest merit. My notes are supplementary to the paper I read last year,[2] containing the statistics as to sex, age of patients when seen, and, as far as seemingly reliable testimony could be obtained, the age when the disease manifested itself for the first time; also the evidence, either affirmative or negative, of a hereditary tendency.

In addition to these points, there is one in which I have been especially interested, which I referred to incidentally last year, but which was much more elaborately treated of by Dr. Sherwell in a later communication; namely, the fact that patients subject to psoriasis, as a rule, are remarkably healthy and strong. This, during the discussion, was doubted, and I thought I would test the matter as far as the number of cases that I should see would allow me to do.

I find on my case-books for the year from July 1, 1885, to June 30, 1886, twenty-five cases in dispensary practice, and seven in my private work. Of this number, that is, thirty-two, I have statistics of twenty-nine, the other three being cases that were seen when I was absent, and the records on these points were not noted by my colleagues. With the object of trying to reduce to numbers the condition of patients with psoriasis, as far as general health goes, I started to mark each case on a scale of five, that is to say, I assumed that five represented a patient in perfect health, and marked each of the twenty-nine cases on that scale. This is, of course, rough work, as I have not subjected the patients to a thorough examination, but when they seemed in blooming health, and reported themselves as being perfectly well, I have marked them five, and when they seemed below par, have marked them on that scale to the best of my ability. I must say, however, that I have been so anxious not to force the point that I hoped and expected to prove, that I really think I have been inclined rather to under, than over-mark. The points that my figures showed last year which seemed to me most interesting and important were not noticed, namely, the fact that while out of the whole number of cases seen, that is, three hundred and ninety-four, twenty-one were under ten years old, there were five cases who insisted that they were first affected by the disease after the age of fifty, and that in ninety-seven cases where the patients felt able to testify as to the fact of a hereditary tendency or not, thirty-one gave an affirmative answer.

The twenty-nine cases observed are tabulated below.

From this table, it appears that sixteen of the patients were of the male sex, and thirteen female. That the youngest case seen was nine years old. That in nineteen cases, what appeared to be reliable information as to the age at which the disease first mani-

[1] Read at the meeting of the American Dermatological Association, August 26, 1886.

[2] See Vol. CXIII, p. 24.

fested itself was obtained, according to which it was under ten in nine cases, the earliest definitely reported being at three years of age, and four being stated as having first shown symptoms of psoriasis during early childhood. That one case seen at the age of fifty-seven insisted that she never had had any similar trouble before. That these twenty-nine cases showed a percentage of psoriasis to total number of cases of skin diseases seen, that is, twelve hundred and twenty, of a little over two and one-third per cent. Twelve cases gave decided evidence as to the existence or not of psoriasis in their parents or other members of their family. Of these, four were affirmative and eight negative.

CASES OF PSORIASIS SEEN FROM JULY 1, 1885, TO JUNE 30, 1886.

No. of Case.	Health on a Scale of 5.	Sex.	Age.	Hereditary influence.	Age at the first manifestations.	Remarks.
1	5	Female.	50	....	....	
2	4	Male.	42	....	....	
3	4	Female.	56	....	....	
4	4	Male.	25	....	....	
5	3	"	12	....	....	
6	5	Female.	36	....	....	
7	4	Male.	34	....	....	
8	4	Female.	23	No.	7	
9	5	Male.	30	....	25	
10	4	"	40	....	15	
11	4	Female.	49	....	42	
12	5	"	12	....	11½	
13	2	"	26	....	14	Phthisis.
14	5	"	10	....	7	
15	5	"	15	....	....	
16	4	"	21	....	3	
17	5	Male.	31	No.	21	
18	5	"	22	....	21	
19	5	"	9	No.	9	
20	4	Female.	25	No.	Childhood.	Is sure this is first attack.
21	5	"	57	No.	57	
22	5	Male.	24	....	....	
23	4	Female.	45	Yes.	35	Father has it.
24	4	Male.	13	No.	10	Had syphilis 10 yrs., symptoms now present.
25	3	"	27	No.	Childhood.	
26	3	"	35	Yes.	12	
27	4	"	34	Yes.	Childhood.	
28	5	"	30	No.	....	
29	5	"	28	Yes.	Childhood.	

With regard to what I have been especially interested in during the past year, the condition of these patients as to general condition and health, while from my previous observations I felt sure that an attempt to make statistics bearing on this point would show that, as a rule, it was decidedly above the average, I did not expect to have my supposition confirmed as strikingly as it has been. I marked each case on a scale of five, and the average mark of the twenty-nine cases is a little over four and one-third! As I have previously said, this is loose work, but I have tried to be fair in my estimate, and have not given any case a five unless they looked and reported themselves as perfectly well. The careful examination of some of these cases might very possibly show that they were not as robust and hearty as they appeared, but in thirteen of the twenty-nine cases I felt justified in marking them five, twelve of them are scored as four, three as three, and one as two. The latter was a phthisical subject. One of the cases marked three reported having acquired syphilis ten years ago, and when seen, had well-marked specific cutaneous manifestations, concomitant with the efflorescences due to psoriasis, he himself appreciating the difference between the two lesions. It seems to me that this case where syphilis and psoriasis were seen on the same subject is a pretty strong proof against the theory of any connection between the two diseases. The fact, also, which I have been trying to prove, that the subjects of psoriasis are generally strong and healthy, would certainly tend to make the claim that psoriasis was in any way connected with a syphilitic taint untenable. The typical subject with psoriasis, as I believe, is perhaps rather too fleshy to be in perfect health. He is very well described by the German's expression of what he considers the best physical condition, "dick und fett."

I have not seen, and from what was said at our meeting last year, I have looked very carefully for it, any case where psoriasis showed itself on the palmar region. I do not mean that I have not seen an eruption on the palms that resembled psoriasis, because I have seen several, but they were all syphilitic, or, at least I thought so, and if I should see any such without symptoms of psoriasis elsewhere, I should much consider it *ipse facto* specific, and be very astonished if it did not yield to specific treatment.

Since the above was written, through the kindness of Dr. Tilden, I have seen a case which compels me to modify my statement. It was one of a boy, aged sixteen, strong, and with decidedly more than the average amount of muscular and adipose tissue, who showed lesions on both palms and on the upper, outside, and posterior aspect of the calf of one leg, a typical, almost circular patch of psoriasis about the size of a silver dollar, the vertical axis of which had been a little elongated. The left hand, which showed decidedly the most development of the disease, had been subjected to local treatment, so that beyond the fact that we had to do with a serpiginous-shaped efflorescence, covering pretty much the whole of the palm, of a non-ulcerative character, from which the horny layer was being separated, not much could be seen. The right palm, however, showed several lesions, such as I had never seen before, and I think that had I seen them, even in a case where there was no characteristic patch of psoriasis elsewhere, I should have hesitated before pronouncing them syphilitic. They were circular, from about one-eighth to three-eighths of an inch in diameter, scattered over the palm in such a way that their coalescing would produce a serpiginous lesion. The largest of them showed a raised margin of thickened epidermis with an almost cup-shaped depression in the centre, as though something had been picked out. There was no appearance of the characteristic silvery scales, nor was there any areola of congestion. The boy had not been working at any trade that would by the use of tools cause any irritation of his palms. He reported that he had been troubled with these symptoms for two years, and gave a pretty reliable account of one of his brothers having had a scaly eruption on his arms. The patient's elbows and knees were perfectly free from any lesions. His two outer lower incisors did show a faint tendency towards notching, but it was very slight, and otherwise he was a decidedly stocky, well-developed boy.

There was one case in which the result of treatment was very interesting to me. It was that of a very stout, strong young man, that I especially noticed, from the fact that one of my colleagues who saw it, was inclined to consider it as specific. The eruption was of short standing, generally developed, and had shown no signs of improvement during four or five weeks' treatment. One weeks' use of chrysorobin cleared his skin up entirely, and although afterwards there were some fresh manifestations they were easily kept under control.

I am perfectly aware of the fact that the mere sta-

tistical tabulation of cases of skin disease may be perfectly useless and uninteresting, nevertheless, from the observation of a large number of cases some facts of importance and interest may be deduced, and facts which cannot be got at in any other way. From the records which I have, of four hundred and twenty-three cases seen, the fact is shown that psoriasis appears, sometimes in early childhood, and sometimes not until the half century is past, and that the male sex is slightly more subject to it than the female. Also, it is proved that an hereditary influence exists in a certain number of cases. From the notes recorded on the twenty-nine cases seen during the past year it would certainly seem that the average physical development and general health was far above the average.

REPORT ON GENITO-URINARY SURGERY.

BY ABNER POST, M.D.

SUPRA-PUBIC CYSTOTOMY.

THE modern ideas in regard to the supra-pubic operation are comparatively well known to readers of the JOURNAL. The operation was treated in the editorial columns of July 16, 1885, and the effect of an inflated rubber bag in the rectum was described in a Report on Anatomy in Vol. CXIV, p. 225. The exact field of the high operation is not yet determined, but experience is doing much to show both the advantages of the operation, and the mishaps to which it is liable. No attempt will be made here to do more than give a few extracts and references to illustrate the differences in opinion as to the value of the operation, different operative procedures, and possible accidents.

In a recent volume,[1] Sir Henry Thompson announces his preference for the high operation, as improved by the method of Garson and Petersen. He believes that the distension of the rectum is valuable not only from the fact that the supra-pubic interval is increased, but from the circumstance that it places the bladder immobile in the surgeon's hands in the abdomen, and out of the pelvis.

At a meeting of the Royal Medical and Chirurgical Society of London, three cases on supra-pubic lithotomy were read, and a discussion[2] followed which brought out some important facts. Mr. Richard Barwell was surprised to find how little a safe degree of rectal distension raised the peritoneal fold. Dr. Garson said that Mr. Barwell's experiments had been made with the abdomen opened for four inches. His own had been made with the abdomen unopened as well. If the abdomen were opened first, but little, if any, raising of the prævesical fold of peritoneum took place.

Mr. Cadge said that in the cases so far reported there had been three of decided hæmorrhage. In one case, eighteen ounces of fluid were injected into the rectal bag, on the removal of which a drachm of blood followed; in a day or two suppression of urine set in, and the patient died. The necropsy showed advanced disease of the kidneys, and a wound of the rectum between it and the bladder, going through to the circular fibres of the muscular coat. Mr. Rivington said that it was dangerous to distend the rectum by anything more than twelve or fourteen ounces of fluid. In his own case, some bloody mucus was passed from the rectum for a day or two after the operation, though the distension had not been excessive.

Van Iterson,[3] of Holland, believes that the value of the operation depends upon the success of the suture of the bladder. If this does not prove feasible, he will return to the lateral operation. He has, so far, performed the supra-pubic operation eight times, with suture of the bladder. Only once has first intention failed. The mucous membrane was not included in the suture, and a soft rubber catheter was retained.

Janiszewski[4] reports two cases; the first case was a very unfavorable one for operation; the stone seemed to fill the whole bladder. The colpeurynter had little effect upon the position of the bladder, and the injection of the bladder was of little effect, because of the hypertrophy of its walls.

Dr. Arnold Schmitz,[5] of St. Petersburg, keeps his patients, who are children, on their face, the position recommended by Trendelenburg in 1877. His little patients are tied until the effects of the anæsthetic passes off, when they become quiet. They are not put upon two pillows with a free space between, as recommended by Trendelenburg, but upon an ordinary mattress. Next the wound comes a carbolic sponge wrapped in antiseptic gauze, over that a thick boracic-acid compress, then some impermeable stuff and the common gauze bandage. The sponge, which maintains a slight compression, is removed on the second day.

An unfortunate accident has occurred to the Parisian surgeon, Saint-Germain. After passing through the linea alba, the inflated rubber bag in the rectum was regarded as the bladder, and opened through the rectal wall, when the rush of air from the incision, and the collapse of the supposed bladder warned him of his error.[6]

Pousson[7] reports a case of rupture of the bladder from the injection of only 200 g. of a boracic acid solution, in the practice of Guyon. At least three similar cases have been previously reported.

At the fifteenth congress of the German Society of Surgery, König endeavored to establish the relative indications for perineal and supra-pubic lithotomy.[8]

Perineal cystotomy, Professor König concludes, is the less dangerous but the more difficult operation. It is suitable in ordinary cases of foreign body in the bladder and for the removal of stones of small and medium size. The high operation with regard to ease of performance is better suited for the removal of large stones; and the risks attending this operation, the principal of which is plegmon of the anterior abdominal wall, are much less than those likely to result from injury to the wound and bladder during perineal cystotomy performed under similar conditions.

THE RETRO-PERITONEAL AND THE COMBINED RETRO- AND INTRA-PERITONEAL INCISION, AS A MEANS FOR EXPOSING THE KIDNEY.

Any one who has attempted a series of operations on the kidney, in inflammatory changes of that organ, has realized how difficult it is with the customary incision in the loin, to make the kidney fairly approachable.

After researches on the cadaver and operations on

[1] The Supra-Pubic Operation of Opening the Bladder, by Sir Henry Thompson, F.R.C.S.
[2] Lancet, April 3, 1886.
[3] Nederl. tijdsch. v. Geneeskunde, 1885, 21, et seg. Centralbl. f. Chir., 1886, No. 9.
[4] Medycyna, 1885, Nos. 51 and 52. Centralb. f. Chir., No. 12, 1886.
[5] Archiv. für Klinische Chirurgie, Bd 33, H. 2.
[6] Quoted by Schmitz, l. c.
[7] Jahresbericht über die Leist und Fort schr. in der Gesammt. Med. 1886. B. ii. Ab. i.
[8] Centralblatt für Chirurgie No. 24, 1886. The London Medical Record, August 16, 1886. Archiv für Klinische Chirurgie, Bd. 34. H. 1.

the living, Professor König, of Gottengen, has reached the following results:[9]

It is possible to make the kidney easily accessible by a retro-peritoneal incision, if the cut is made from the last rib downwards on the outer edge of the erector spinæ to a few centimetres above the ilium, and then curving forwards continuing the line towards the umbilicus and ending on the outer border of the rectus, or, under certain circumstances, continuing into this muscle. Sometimes it may be advisable not to make the incision in the loin vertical, but to carry it immediately somewhat obliquely, so that it passes over in a long curve into the cross cut toward the navel.

In the direction of the proposed cut, several muscles are incised or divided. The transverse cut divides the latissimus as well as the oblique and the transverse abdominal muscles and sometimes also the rectus, dividing all these muscles down to the peritoneum where they lie upon it. If it seems doubtful about recognizing the separate muscles after their retraction in order to unite them, one may run a thread through them as they are cut and designate the corresponding parts by knots as belonging together.

This cut, made in this manner, gives an astonishing accessibility, which can be decidedly increased if from the posterior vertical part of the incision, the peritoneum is separated with the hand and pushed forward, which is easily accomplished to a considerable extent.

This incision König would designate as retro-peritoneal lumbo-abdominal (Leudenbauchschnitt) incision, (with displacement of the peritoneum forwards.)

If the proposed cut does not give sufficient room, or if for adequate reasons it appears desirable for diagnostic or operative purposes to make the tumor approachable from the abdominal cavity the peritoneal covering may be cut in the transverse incision. This part of the incision must evidently, as it opens the abdominal cavity, be carefully conducted in case infectious material is to be evacuated from the kidney or its pelvis. Usually it would be possible to close at least the peritoneal incision, before removing or opening a suppurating kidney.

This incision Professor König would distinguish as retro-intra-peritoneal lumbo-abdominal incision.

A NEW PROCEDURE FOR THE REMOVAL OF SMALL CALCULI FROM THE BLADDER IN MALE CHILDREN.

Mr. Thomas Annandale reports the following operation upon a boy of four and one-half years, the subject of a small stone. Under chloroform the urethra was dilated, the bladder injected with antiseptic fluid, a small lithotrite passed and the stone seized. The handle of the instrument was then depressed causing its vesical extremity together with the stone to be felt through the abdominal wall immediately above the pubes. A small incision was then made which allowed the lithotrite to be pushed through the wound, the stone was extracted and a No. 9 india-rubber catheter was seized and drawn into the bladder as the lithotrite was withdrawn. A tube was inserted through the abdominal wound. After forty-eight hours both tube and catheter were removed, and the patient was well on the tenth day.

Mr. Annandale believes this to be a much less serious proceeding than the ordinary supra-pubic operation, as the bladder is scarcely disturbed and the wound made in it is very limited.[10]

[9] Centralblatt für Chirurgie, No. 35, 1886.
[10] British Medical Journal, Jan. 2, 1886.

COMBINED INTERNAL AND EXTERNAL URETHROTOMY.[11]

Mr. Reginald Harrison has combined the two operations in twelve cases with good results. In considering the subject he first enumerates the objections to internal urethrotomy, and the advantages of Symes's operations. Internal urethrotomy is extremely liable to be followed by a form of fever which is exceptional, unexplainable, and occasionally fatal. In the second place it does not furnish better permanent results than other methods of treatment. The conditions which generally attend the operation of internal urethrotomy are unfavorable to the best kinds of repair. The section which is requisite for the division of the contraction necessarily paralyses the urethra for rather more than the extent of the wound inflicted, and the process of repair has to be carried on with the wound soaked in the urine that is left behind to stagnate and to undergo change after each act of micturition. This is a very different thing from the flow of urine over the open wound of a lithotomy or a perineal section. In internal urethrotomy there is retention within a confined space, in external urethrotomy there is merely contact of urine with open surfaces. The latter operation unfortunately cannot include the whole of many strictures by reason of their position and relation to the perineum; for instance, those within the limits of the scrotum or in the penile urethra. In combining the two operations, Mr. Harrison's object was to secure that the healing process following the division of the stricture should proceed without being subjected to those influences, immediate and remote, which he ascribed to the presence of stagnant urine in the wound. He desired that the "cicatricial splice" should be formed under circumstances most favorable to repair.

Mr. Harrison's plan consists in doing first, thoroughly and completely, the internal urethrotomy. A grooved staff is then introduced into the bladder, and the membranous urethra opened for the passage of a drainage-tube into the bladder.

Mr. Harrison makes the perineal incision or perineal puncture, as he prefers to call it, as follows: The patient being placed in the lithotomy-position and a grooved staff introduced, he punctures the membranous urethra with a long straight finger-knife one inch in front of the anus, the back of the knife being towards the rectum; the incision is slightly enlarged forwards, so as to permit the introduction of the index-finger; if the staff is found exposed at the bottom of the wound, as it generally is, all well and good. If not, a somewhat blunt knife is introduced on the finger and the remaining fibres divided. (The plan of the incision is first to make it fit the finger, and subsequently the drainage-tube; if this is done accurately, there is practically no bleeding.) Wheelhouse's small, probe-pointed gorget is slid along the staff which is then withdrawn and the drainage-tube passed along the concavity of the gorget into its position. The drainage-tubes are somewhat less in size than the index-finger. They are secured by an eye at each side through which a tape can be passed. The end should be just within the bladder and no more. When the internal urethrotomy has been freer than usual, a drainage-tube is introduced from the meatus and brought out at the perineal wound by the side of the bladder drainage-tube. In other cases it is sufficient

[11] British Medical Journal, July 18, 1885.

to wash out the anterior portion of the canal with some antiseptic fluid. The cases operated upon included the worst and most unpromising, but so far there have been no rigors nor urinary fever.

SECTION OF THE HYPERTROPHIED PROSTATE.

Mr. Reginald Harrison proposes to treat certain cases of prostatic obstruction by division of the gland, access to the field of operation being gained by means of the bontonniere as in the manner of treating sessile growths proposed by Thompson. The most formidable form of obstruction which the prostate affords, is that most amenable to division when the gland grows not in lobulated masses but by an upheaving of its floor. Although the obstruction both to the escape of urine or the introduction of an instrument into the bladder may be very complete, the amount of tissue requiring division is not necessarily large. The operation consists in opening the membranous urethra from the perineum on a guide and introducing the finger within the prostatic urethra. The obstructing portion of the gland is then divided in the median line partly by incision with a straight probe-pointed knife and partly by divulsion with the finger or large-sized bougie until the access to the bladder is felt to be free. In doing this operation it is not desirable to make an opening larger than will admit the index-finger from the perineum into the bladder; such an opening is completely filled up by the drainage-tube that is subsequently used, and consequently but little risk of hæmorrhage need be entertained. Considerable importance is attached to the prolonged use of the drainage-apparatus as the object is to render the section of the prostate not a temporary one but permanent. The tubes are retained from six to twelve weeks.

It will be observed that section of the bar is preceded in all instances by a careful digital exploration of the prostatic urethra, with a view of directly determining the nature of the obstruction and the direction of the incision to remove it. Mr. Harrison records the following case. D. E., came under his care in 1883, with an atonied bladder and retention of urine from enlarged prostate. There had been great difficulty in passing the catheter and much blood had been lost. The patient was childish and would not retain a catheter. After three weeks' trial of various forms of treatment the operation described was done and a bar of considerable thickness divided. Hæmorrhage and cystitis disappeared. The patient was able to go about in ten days, his urine being discharged at will by turning a tap connected with the drainage-apparatus. The tube was retained for eight weeks when a considerable quantity of urine began to escape by the urethra. The tube was withdrawn and the wound rapidly closed. This patient has never had any further impediment to the natural escape of urine along the urethra. He could retain his urine for four hours, and there was no residual urine, nor was there any difficulty in passing a large-sized instrument into the bladder. Six months after the operation the patient had a paralytic seizure from which he has not recovered, but resort to catheterism has never been necessary. The introduction into the prostate of no inconsiderable quantity of cicatricial tissue has probably something to do with the result.

The author advocates the free incision of the enlarged prostate during the lateral operation for stone and the retention of a tube for six, eight, or ten weeks so as to bring about a permanently improved condition of the outlet.

THE TREATMENT OF CHRONIC URETHRAL DISCHARGE BY EXTERNAL URETHROTOMY.

Mr. Reginald Harrison [12] relates a case of urethral discharge of four years' duration, which had resisted all the usual methods of treatment, including internal urethrotomy, which was cured by this means. An india-rubber tube was passed through the perineal opening into the bladder and retained there for twenty-five days.

Therapeutical Memorandum.

ACUTE RHEUMATIC CARDITIS TREATED WITH SALICYLATE OF SODIUM.[1]

BY SAMUEL L. ABBOT, M.D.,
Visiting Physician, Massachusetts General Hospital.

I WAS called, on the evening of February 8th, to Madame ——, a Frenchwoman, who had been suffering for a week from an attack of acute rheumatism. She had had no medical advice, as the symptoms were not very urgent, and she "hated doctors." Domestic remedies had been employed, such as sinapisms, enveloping the affected joints with cotton, etc. For the first four nights sleep had been much interrupted by pain, but the patient had slept pretty well on the fifth and sixth nights. She had had an attack of acute rheumatism three years before, which lasted seven weeks. At the time of my visit, she was in a comfortable condition so far as pain was concerned. The feet and ankles, knees, shoulders, and right hand had been inflamed, but were now free from pain; the feet, however, were puffy with œdema. The left arm and hand were enveloped in cotton and not painful, except on motion or firm pressure; the hand was œdematous.

The patient was very drowsy, finding it difficult to keep awake, and had dozed most of the day; it was this condition which had excited alarm in her friends, and led them to call in medical advice. It was not difficult to arouse the patient, so that she answered questions intelligently, but languidly, as if overwhelmed with stupor. She had taken no medicine, and said she had no pain. She was taking sufficient nourishing food, and had committed the indiscretion of eating meat for dinner the day before. Her breathing was very quick, apparently without any sense of dyspnœa, the respirations being forty-six in a minute. Pulse 112, regular; of moderate force; temperature 105.4° in the axilla.

On examining the chest, nothing abnormal was detected in the lungs in front, and I did not deem it expedient to raise her to examine the back. The cardiac dulness was not increased. The sounds of the heart were clear and distinct, of moderate force, and a loud, systolic souffle was heard throughout the cardiac region, loudest over the aortic valves, and heard faintly beneath the left clavicle. Considerable tenderness was found on pressure in the intercostal spaces over the heart, which the patient had not been conscious of before. The tongue was nearly clean, and moist; salicylate of sodium was prescribed, to be taken in ten-grain doses every two hours.

[1] Read at the Boston Society for Medical Improvement, May 24, 1886.

[12] Lancet, September 5, 1885.

The patient slept well during the following night, and was free from pain and tenderness over the heart the next morning; the systolic souffle, however, continued. She was very bright and smiling, entirely relieved of the stupor of the previous evening, and said she had very little recollection of what had occurred during my visit at that time. She had taken five doses of salicylate of sodium during the night, and had perspired very freely; the œdema continued. The temperature had fallen to 98.6° — nearly seven degrees. Pulse 100, respirations 20. The urine was high-colored, strongly acid, contained an excess of urates, and was of specific gravity of 1016; there was no trace of albumen. Treatment continued.

February 10th. The patient had slept well, and had no pain. There was some deafness, with tinnitus. The left hand was still somewhat puffy, but could be used freely without discomfort. There was still slight œdema of the feet. A faint systolic souffle could be detected over the base of the ventricles, but could scarcely be heard over the aortic valves. The patient stated that she had not been conscious of any cardiac disability following the first attack of acute rheumatism three years before. Temperature 97.6°, pulse 84, respirations 18. The salicylate had been given during the night, and was ordered to be continued every two hours, in alternate doses of ten and five grains, the dose to be increased *pro re natâ*.

February 11th. The patient is free from pain, having slept well. Tongue nearly clean. At the second left intercostal space, over an area extending to the left, about an inch and a half square, the systolic souffle can be distinctly heard, with a slight reduplication of the sound of the pulmonary valves, the souffle being scarcely audible over the aortic valves, and very faint at the apex. No friction-sound has been heard from the first. Urine still turbid with urates. Temperature 98°, pulse 80, respirations 16.

The patient was allowed to sit up and eat a little chicken with her broth, having taken milk and broth freely from the first. Tr. Ferri Chlorid. mx, Glycerin. mxv, aquæ ad fzi was prescribed, to be taken after each meal. The salicylate of sodium was omitted, to be resumed *pro re natâ*.

February 12th. The patient felt well, and was sitting up in bed at time of visit, having been up out of bed half of the previous day. Bowels regular without medicine. Has had no pain or dyspnœa. The souffle can hardly be heard over the aortic valves, and is very faint over the region where it was so distinct the day before. Decided accentuation of the pulmonary valves; no souffle heard at apex. Temperature not taken; pulse 84. The patient has not required the salicylate of sodium. The iron was ordered to be continued, and full diet was allowed.

February 17th. Since the 13th the patient has been up and about the house the whole of each day, feeling quite well, except that she is not very strong. Nothing abnormal can be detected about the heart. A pill of quinine, iron, and nux vomica was prescribed, to be taken before each meal, instead of the tincture of the chloride of iron.

The leading features of the case may be summarized as follows:

The patient, when first seen, had been ill six days with acute rheumatism, for which she had had no medical treatment. On the seventh day, symptoms of stupor and her general condition excited alarm among her friends, who called in the writer, who found the patient with a temperature of 105.4°, rapid respiration and heart action, with tenderness over the cardiac region, and a cerebral condition looking like impending coma, suggesting very forcibly the closing scene of fatal pericarditis. On examination of the heart, a loud, general systolic souffle was heard, but no friction-sound.

Treatment with salicylate of sodium, without any local applications, was followed by a very rapid disappearance of the cardiac and cerebral symptoms, and speedy recovery, the patient being able to sit up half of the third day after the treatment was commenced, and all day after the fourth. Scarcely a trace of the morbid physical signs was detected on the fifth day, and nothing abnormal on the ninth.

At the time of the first visit, with the history of a previous attack of acute rheumatism, it was impossible to form an opinion whether the souffle detected was due to that attack or to the present one. The rapid disappearance of this symptom settled this point, and raised an interesting question as to its origin. Taken in connection with the cardiac tenderness, the œdema of the affected joints, the accompanying rapid respiration, and the high temperature, and the fact that the morbid sound lingered last over the base of the ventricles, I cannot resist the conviction that the case was one of rheumatic myocarditis, and the abnormal sound was muscular, rather than valvular; for it seems hardly possible that an inflammatory valvular change, sufficient to produce so loud a murmur, could have disappeared so quickly. My impression is strengthened by reading the interesting paper of Dr. West on "Parenchymatous Myocarditis," published in the *London Lancet* of January 20th and 27th of the present year, in which the first case reported was characterized by a similar souffle, but in which, after death, the autopsy showed nothing abnormal about the valves, but marked evidence of myocarditis; and Bramwell, in a paper published in the *American Journal of Medical Science* for April, 1886, speaks of "cases of mitral and tricuspid regurgitation due to simple dilatation, and to structural changes in the cardiac muscle" ("relative and muscular incompetence," as he terms them) — "conditions which are very common during life, and which may be unattended with any naked-eye lesion of the valvular apparatus after death."

If my view of the case now reported be correct, it strengthens my impression of the value of the salicylic remedies in the cardiac complications of acute rheumatism claimed for them in my paper on "Rheumatic Pericarditis," read before this Society at the meeting of January 11th, and published in the *Boston Medical and Surgical Journal* of January 21st of the current year. I am glad to find my position sustained by Professor Latham, of Cambridge, England, who, in his third Croonian Lecture on "Some Points in the Pathology of Rheumatism," delivered at the Royal College of Physicians of London, in April, 1886, and published in the *Lancet* of May 1st, says, in speaking of the power of salicylic acid over acute rheumatism: "In no case of rheumatism that has come under my care during the last six years, either in hospital or private practice, has there been, where the heart was previously sound, any cardiac complication, such as endocarditis or pericarditis, developed." And again: "Cardiac complications constitute the chief danger of acute rheumatism, and the danger, if the disease is taken in hand soon

enough, may, with our new remedy, be averted." He insists, however, upon pure salicylic acid alone being employed, and says that he "has given it in rheumatism complicated with pericarditis, and as yet has seen no bad result from it." So far as my experience goes, I can say the same of salicylate of soda, with the addition that recovery from this cardiac complication in the few cases in which I have had an opportunity of trying it, has been the result, and this without resort to the favorite, and, I must think, the doubtful alkaloid treatment.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

E. M. BUCKINGHAM, M.D., SECRETARY.

MAY 24, 1886, the President, DR. F. W. DRAPER, in the Chair.

DR. G. H. MONKS showed, by invitation, colored models from original dissertations of the

DISTRIBUTION OF THE CUTANEOUS NERVES.

DR. J. J. PUTNAM read a paper on

SYPHILIS OF THE NERVOUS SYSTEM.[1]

DR. R. T. EDES was glad that these cases had been analyzed. The curability of syphilitic lesions of the nervous system has at times been somewhat exaggerated, although they do sometimes improve rapidly.

DR. C. F. FOLSOM said that the relation of syphilis to these diseases is something of which we as yet know little. How much is directly due to syphilis, and how much to the body being long debilitated by syphilis? in how many of them is syphilis latent? how often do we have these diseases when syphilis is properly treated from the beginning? how often when it is not so treated? He thinks that in a large proportion of cases general paralysis is a late lesion of syphilis. In seventeen cases he has found fifteen histories of syphilis. In Ireland it is a much more rare disease than in England or Scotland, and so is syphilis. It is possible, however, that it depends merely on the debility caused by syphilis. The effect of iodide of potassium in its treatment has been over-rated. When paralysis is distinctly local, we do get benefit from the iodide, but we have to use large doses. He had given a drachm without effect, and had seen marked benefit from half an ounce to six drachms.

DR. PUTNAM said that he had tried to learn what has been the treatment in the early stages. He asked if, notwithstanding the modern theory as to the need of prolonged treatment of syphilis, it is not a fact that most patients are allowed to pass from under observation with the cessation of the first symptoms. He thought that it was so.

DR. J. C. WHITE said that ten years ago, prolonged treatment of early syphilis was not insisted upon. To-day it is almost entirely confined to specialists in syphilis and dermatology. Nine cases out of ten of advanced syphilis were treated at first only two or three months — long enough to remove the symptoms. He was sorry to say, however, that he had himself treated cases persistently for twelve to twenty-four months, and that among these there had been some late and severe forms of nervous syphilis. It is impossible to state how far nervous symptoms may be warded off by proper treatment. The paper, in his opinion, labored under the difficulty that many cases were considered that we do not know to be syphilis, except in so far as we can judge by the cerebral symptoms.

DR. PUTNAM stated that he had tried to tabulate cases in which there were cutaneous and other distinctly syphilitic symptoms, and that all that we can do with others is to repeat observations constantly, watching the effect of syphilitic treatment.

DR. S. L. ABBOT read a paper on

ACUTE PNEUMATIC CARDITIS TREATED WITH SALICYLATE OF SODIUM.[2]

DR. F. C. SHATTUCK said that Dr. Abbot's very interesting case brought out several questions. The diagnosis of myocarditis is one of the most difficult to make during life; and, while it cannot be denied that the souffle and the tenderness in the region of the heart noted in this case were very likely due to this process; another explanation seems very possible. As to the causation of some heart-murmurs, our knowledge is very precise; as to others, it is very vague. In high fever of whatever nature, a murmur is frequently heard over the heart, entirely apart from any inflammatory process in any portion of the cardiac structure, as far as we know. Such murmurs are called dynamic by some, and are attributed to relaxation of the heart-muscle, and consequent imperfect closure of the mitral valve. In the case under discussion, the fever was very high — proportionally higher than the pulse-rate — but not so high as the respiratory-rate, and the murmur became much less marked as the pyrexia fell under the influence of the salicylate. A purely dynamic murmur often behaves in the same way. As regards the tenderness over the region of the heart, this symptom might be attributed to a rheumatic affection of the fibrous structure about the ribs and their cartilages, especially in a case of rheumatic polyarthritis.

Moreover it seems to be very doubtful whether the salicyl compounds really exert any direct protective influence on the heart and pericardium. That they control the fever and the articular symptoms of acute rheumatism in a very remarkable degree there can be no question. Dr. Howard, of Montreal, who contributes the article on rheumatism to "Pepper's System of Medicine," goes carefully into the question of the development of cardiac inflammation during the salicyl treatment, and brings together a series of large number of cases reported by different observers which tend strongly to show that the prophylactic influence of these remedies over the heart is certainly very small. Dr. Howard, himself, in common with many other skilful physicians, believe that the best treatment of acute rheumatism consists in a combination of the salicylic and the alkaline treatment. The fever and the articular symptoms are relieved by the first, the danger of cardiac complications is greatly diminished by the second. The question involved demands and deserves further study; and can only be settled by a careful analysis of a very large number of cases, occurring in different years and localities, and under different but trustworthy observers. But the drift of opinion at present seems to be against the power of salicylic acid directly to influence rheumatic cardiac inflammation, an additional argument that perhaps

[1] See page 317 of this Journal.

[2] See page 326 of this number of the Journal.

myocarditis was not present in the case reported by Dr. Abbot.

Dr. Abbot in reply to Dr. Shattuck admitted the general difficulty of a confident diagnosis of carditis, but he thought the case reported presented all the features of a genuine metastases to the heart. The rheumatic inflammation had attacked joint after joint, with the usual local symptoms. These had subsided and the cerebral and respiratory symptoms came on as a sequence. The patient was seen during the first day of these symptoms and was found in a very alarming condition. The local pain was developed by pressure in the intercostal spaces over the heart, but not over the ribs or cartilages, nor in the intercostal spaces elsewhere. The pulse is confessedly variable in rheumatic carditis, and is not necessarily very quick. Dr. Shattuck was in error in his impression that the murmur became at once much less marked as the pyrexia fell, under the influence of the salicylate. On the morning after it was first administered the temperature had fallen to 98.6°, with entire relief to the tenderness and stupor, but the souffle was just as strong as before the administration of the remedy, and diminished gradually during the following days, the temperature remaining at a low point; as if the inflammatory change in the heart structure were subsiding by degrees just as occurs in a rheumatic joint, after the acute pain has disappeared.

The cause of the murmur in these cases is confessedly difficult to determine; but Dr. Abbot thought that the theory of inflammation suggests a reasonable explanation, in the embarrassment it would be likely to cause to the free contraction of the heart muscle, by which the normal action of the columnæ carneæ would be seriously interfered with.

THE AMERICAN GYNÆCOLOGICAL SOCIETY.[1]

A CASE OF ABDOMINAL SECTION FOR CHRONIC SUPPURATIVE PERITONITIS.

By Dr. John C. Reeve, M.D., of Dayton, Ohio.

A., aged nineteen, living as if married, was healthy until November last. She had never been pregnant. She was attended by a physician who found abdominal inflammation. On January 18th, she was seen in consultation by the speaker, at which time she presented the evidences of chronic peritonitis, but no history of a gonorrhœal origin could be obtained. One month later she began to pass pus by the rectum. After other measures of relief had failed, laparotomy was offered in April, but declined. The patient was not seen again until June 20th, when she desired the operation. She had suffered with hectic, the menstruation had ceased since January, and examination of the urine showed no albumen. There was great tenderness and hardness all over the abdomen, pus being still passed with the stools. By vaginal examination, no definite hardness could be detected. By the rectum there was ill-defined resonance high up on the left side. No opening into the rectum could be detected, although frequent examinations for this purpose were made. The patient was greatly emaciated, the weight having fallen from one hundred and twenty-five pounds to seventy pounds.

The operation was performed June 23d; there was great difficulty in the administration of the ether. On opening the peritoneum all the parts were matted together. The abdomen was washed out by allowing water to run into it from a pipe, and then syringing out what remained. Finally a cavity was reached in the left lumbar region. It was impossible to attach the walls of this cavity to the abdominal wound, and as the condition of the patient was by this time alarming, a drainage-tube was introduced and the abdominal incision closed with sutures. In the course of several hours the patient gradually rallied from the operation. The temperature did not go above 100°. The cavity was washed out with a solution of iodine in tincture in water. The upper two-thirds of the abdominal wound failed to unite. On the fourteenth day a large quantity of fæcal matter came through the wound. This has continued to recur. In July, evidences of Bright's disease were detected; since then there has been some improvement in the general health. I think that if the patient had consented to the operation when first proposed, the result might have been different. One of the principal objects of the paper has been to ascertain if, as has been stated, fæcal fistula is an invariable consequence of laparotomy for abdominal inflammation in cases where pus has already escaped by the rectum.

[1] Continued from page 309.

DISCUSSION.

Dr. J. Scott, of San Francisco. I would mention the following case. A patient was admitted to the hospital with prolapse, inflammation of the ovaries and cellulitis. After three months' treatment without improvement, removal of the ovaries was recommended but declined, by the patient. The patient was kept under treatment for six months longer, when enlargement of the right ovary began. Later, pus discharged by the rectum, and subsequently, the abscess opened into the bladder. The patient then consented to operation. The abdomen was opened, an opening made into the vagina and a drainage-tube introduced. The improvement was not marked, and in the course of two months the patient was as bad as ever. The removal of both ovaries and tubes was then performed. Four or five days after the operation fæces appeared in the wound. During the five months succeeding the operation the fæcal fistula has closed, the patient has gained ten pounds, and is able to walk about.

Dr. William Goodell, of Philadelphia. The only case which I have had at all similar to the one reported was one of pelvic abscess, opening into the rectum and bladder. I performed laparotomy with the intention of opening the abscess and stitching its walls to the abdominal wound. The abscess had been so constantly drained, that it was not larger than a pear. By compressing the abscess sac, I was able to make it prominent in the vagina and forced into it a closed pair of scissors, which were then opened and the opening gradually enlarged and a drainage-tube inserted. This case gradually recovered, both the rectal and vesical openings closing in the course of time.

Dr. C. C. Lee, of New York. I think that the rule will come to be established that in chronic suppurative peritonitis, laparotomy is not only justified but the procedure to be adopted.

Dr. R. S. Sutton, of Pittsburg. In a case of pelvic abscess as large as a cocoanut, I performed laparotomy and then stitched the peritoneum at the edge of the incision to the peritoneum covering the abscess,

which was then opened and a drainage-tube introduced. The patient recovered.

Dr. Joseph T. Johnson, of Washington. I would suggest that in such cases as the one described by the author where time is a matter of importance, much can be gained by adopting the procedure employed by Drs. Bantock and Tait. In washing out the abdominal cavity they pour the water into the cavity with a pitcher, using gallons at a time. In this way the cleansing is rapidly accomplished.

Adjourned.

WEDNESDAY.— SECOND DAY.— MORNING SESSION.

ERGOT AFTER LABOR.

By Dr. John Goodman, of Louisville, Ky.

In the absence of the author, the paper was read by the secretary. The administration of a full dose of ergot immediately after the completion of labor has become a general practice. It is claimed that it promotes involution, prevents after-pains and tends to prevent post-partum hæmorrhage. Some years ago, the author administered a full dose of ergot after a perfectly normal labor. In fifteen minutes, severe pain appeared and increased. The tenderness in the uterus continued for a week. There was no milk, and the patient, previously prolific, never again conceived. The trouble was attributed to inflammation of the muscular coat of the uterus produced by the action of the ergot.

In a second case, treated in May, 1886, ergot was given after a forceps delivery. On the seventh day the patient had a chill, followed by a temperature of 104°. The next day a clot was washed out of the uterus, and the temperature fell to 99°. Well-marked septicæmia developed, and the patient died one week later. In this case, the retention of the clot was attributed to the spasmodic contraction of the uterus, preventing its escape. The author has seen other cases in which injurious effects were produced by the administration of ergot.

He claimed that ergot did not assist involution, which was a natural process, and required a certain length of time for its completion. That we have in ergot a remedy capable of arresting after-pains cannot be doubted, but it does so by exciting a mode of muscular action at variance with all physiological laws. After-pains are conservative, and it is better to wait until they become of abnormal severity before resorting to treatment. Ergot is capable of preventing hæmorrhage, but its use is attended with such dangers that it should not be employed, except under exceptional circumstances. It should be an inviolable rule not to give ergot at the close of the third stage of labor, unless hæmorrhage is imminent. It should then be used by hypodermic injection.

DISCUSSION.

The President, Dr. Thaddeus A. Reamy, of Cincinnati. I have in process of preparation a paper in which is entered my protest against routine practice of the administration of ergot after the third stage of labor. This conclusion is based upon my experience, and upon a study of the action which is claimed for the drug. The contractions produced by ergot are unlike those of nature. The contraction of ergot is persistent, while the normal contraction is intermittent. If the contraction is persistent, the circulation of the uterine wall cannot reach a healthy state, and thus it not only retains what is in the uterine cavity, but it interferes with the process of involution, and lays the foundation for sepsis and inflammation. I think that in the course of the next five or ten years, the practice of obstetricians in this matter will be revolutionized.

Dr. William Goodell, of Philadelphia. The author of the paper states that it is only since last May that he has given up the use of ergot. I think that he has not had sufficient time to form such positive opinions. In the first case, I think that there must have been a fibroid tumor; the second case was a clear instance of septicæmia. I do not think that after-pains are conservative. As a rule, we do not see them in primipara. These pains are in great measure the result of weaknesses induced by civilization. I do not believe that every woman who has given birth to a child needs ergot, but we do not know the cases which do require it. In twenty-five hundred cases of labor, I have always given ergot after the completion of labor, and I have never seen any harm from its use. I do not believe that one dose of ergot has much effect in favoring involution. Involution is the result of fatty degeneration, and the greater the contraction, the greater the interference with circulation, and the more rapidly should this change take place. I have used ergot for two purposes: one to prevent hæmorrhage, and the other to prevent the absorption of septic matter. Since the introduction of antiseptics, which, I think, should be used in every case of labor, whether public or private, the use of ergot to prevent septic infection is not so important. I think that it does not do the harm which has been mentioned.

Dr. George J. Englemann, of St. Louis. I hold, in the main, the views which the President has expressed. I use ergot much less than I did a few years ago. I believe that we have equally effective measures in the hot antiseptic douche and in the Faradic current. After the contents of the uterus have been expelled, ergot will, in certain cases, always be a useful and effective remedy. I would not venture to say that after labor ergot is out of place, but I think that I may say that before the contents of the uterus are expelled, it should not be used at all.

Dr. Theophilus Parvin, of Philadelphia. The effect of ergot varies with the dose. A small dose acts simply to increase the normal uterine contractions. I must object to the assertion that ergot should never be given before the completion of labor. Statistics show that those who are most successful in the treatment of placenta prævia are the men who use ergot. Again, in a multipara, with the os dilated, where a sudden rupture of the membrane has taken place with a cessation of labor, fifteen or twenty grains of ergot causes a rapid completion of the labor. After a protracted labor, there is a weariness of the uterus, and a failure to enter upon the normal retraction, which is a preventive of hæmorrhage, and tends to promote involution. As long as in the third stage of labor we assist Nature in the expulsion of the placenta, why should we not assist Nature in securing normal retraction of the uterus after the completion of the third stage? In some experiments which I made at the Philadelphia Hospital, to determine the rapidity of involution of the uterus in women who had received ergot, and in those who had not, it was found that in those who received ergot after delivery, uterine involution seemed to take place more rapidly.

Dr. Skene, of Brooklyn. I have never seen such effects from ergot as have been described in this paper. I do not think that in the cases reported the ergot had anything to do with the production of the effects. All rational men use ergot as any other remedy, when it is necessary, or may possibly become necessary. If there is any doubt whether or not it is needed, it is better to give the patient the benefit of the doubt.

Dr. P. C. Williams, of Baltimore. I believe that ergot has its place in obstetrical medicine. I have never yet regretted its use in any case, but I have regretted not using it. The great danger under the use of anæsthetics is hæmorrhage. To avoid this, the use of ergot seems to be the proper thing. I admit that ergot is abused, but the abuse of ergot is no argument against its proper use.

Dr. Thaddeus A. Reamy, of Cincinnati. The profession is not taught that ergot should be given in diseased conditions, but that it shall be given in all cases after labor, as a routine practice, and it is only against this use of it that I raise my voice.

The next business was the reading of the

PRESIDENT'S ADDRESS,

by Thaddeus A. Reamy, M.D., of Cincinnati.

The speaker first referred to the prosperity of the Society during the past ten years, and spoke of the great advance of abdominal surgery and ovariotomy during the same time. The speaker thought that the less satisfactory results obtained in America, as compared with other countries, might be due to climatic and constitutional conditions, and to the fact that the operation was performed by too many operators. The operation of removal of the ovaries for beginning cystic troubles and for other conditions is performed in many cases which could be relieved by other and less serious measures. The practice of Schroeder in leaving the undiseased ovary was recommended. The success of ovariotomy has led to the performance of laparotomy on other conditions, as suppurative peritonitis, with satisfactory results.

The use of electricity as a therapeutic agent is attracting much attention. It is the safest and most effective remedy in extra-uterine pregnancy, and it is coming into use in many other uterine conditions.

The treatment of extensive fibroid disease was next taken up. Medical treatment is in the main unsatisfactory, although, in some cases, good result has followed the use of ergot and electricity, especially the latter, which is perhaps the most effective therapeutic agent in these cases. The operation of hysterectomy should not, as a rule, be performed in these cases. Spaying has met with more favor and success than any other surgical procedure. There are a few cases where, on account of the large size of the tumor, or its fibro-cystic character, hysterectomy probably affords the best hope.

Pelvic deformities were next considered. In the lesser degrees, premature labor, with the use of appropriate forceps applied with proper skill, were recommended. With reference to operative procedures, the mortality in the United States has been very great. An important reason for this is the failure to recognize the importance of early interference. It has also been shown that, other things being equal, the danger is increased by doing the operation after the death of the child.

The total extirpation of the uterus for cancer has been steadily growing in favor. So far as the speaker had examined, the clinical proof of the evidence as to its utility had not been convincing. While patients had recovered from the operation, it is not yet proven that the operation is justifiable, except where the disease is confined to the body of the uterus or the cervix, and the vagina is free. While the view that epithelioma of the cervix is due to traumatism is not generally accepted, he believed that traumatism of the cervix was conducive to the development of epithelioma. If for no other reason, Emmet's operation is warranted on the sole ground of a preventive.

The speaker, in referring to the uterine curette, stated that he had recently had alarming symptoms following its use, and in one case where the instrument was used immediately after dilatation with sponge-tents, death resulted. Peritonitis had not been developed in a single case where the dilatation had not immediately preceded the operation. Rapid dilatation is alleged to be comparatively free from the dangers attendant upon the use of tents, but he had recently had a high degree of peritonitis following dilatation by this method, where the curette was not used.

The following rare case was then described: A married woman, aged thirty-two, the mother of two children, had suffered with severe menorrhagia during the past year. There was an old laceration of the perineum, but no laceration of the cervix. The uterus measured three and one-fourth inches, and was not tender. No pelvic tenderness could be detected. Treatment directed to the general condition was ordered, and under it the anæmia improved and menorrhagia decreased. Some months later the blunt curette was used, with the woman in the lithotomy position. No dilatation was required. A large amount of the fungus tissue was removed from the posterior wall, and the curette was then passed over the anterior wall. During the manipulation, no roughness being employed, the instrument passed through the uterine wall. It was at once withdrawn, and a sound being introduced, it readily passed its whole length, and its extremity could be felt externally above the umbilicus. Forty drops of laudanum was administered by the rectum, and an ice-bag placed over the abdomen. The ice-bag was kept on continuously for five days. The accident caused no symptoms whatever. The perineum was subsequently restored, and the woman's health is much improved. The menorrhagia has disappeared.

In concluding, the President referred to the proposition looking to the organization of a Congress of American Physicians and Surgeons, and hoped that the action of the Society would be favorable to such an alliance.

THE INFLUENCE OF MENTAL IMPRESSIONS ON THE FŒTUS,

by Dr. Fordyce Barker, M.D., of New York.

The belief that maternal impressions may affect the nutrition and development of the fœtus in utero has existed from the earliest periods of which there are any records. Medical writers with hardly an exception, down to the beginning of the eighteenth century, express the belief with more or less distinctness that fœtal marks and deformities are due to the emotions, desires or shocks of the pregnant mother. Reference was then made to numerous papers written within the past twenty years in which this theory was strongly controverted. Those who disbelieve in

this doctrine base their scepticism on what they regard as physiological reasoning and chiefly on the assertion that there is no direct nerve connection between the maternal and fœtal system. Deformities they urge are due to arrest of development; but no one has brought forward sound physiological reasons why this arrest of development may not have been caused by mental impressions affecting the fœtal nutrition by their influence on the maternal blood. Extremely rare as is the occurrence of cases which prove the result of this influence, he considered the fact is so well proved by sufficient authentic evidence as to make it as certain as any other fact which cannot be explained by science. The term "mental impressions" should include those which have a physical as well as a psychical origin.

Five cases coming under the author's observation were described.

The first case was that of a young lady, who at the age of eighteen had for the first time been taken to the theatre and had seen Sothern, the actor, in the part of Lord Dundreary. From this time she spent her whole time in writing to Lord Dundreary, and she thought and talked of nothing else. This continued several months and under treatment and change of scene, gradually wore away. She subsequently married, and four years after her attack of insanity, her first child, a boy, was born. As the child became able to talk he exhibited peculiarities, resembling those of Lord Dundreary. He walked with a little skip, had a slight stammer in his speech, and his left brow was drawn down with the lids partially closed.

The second case was that of a lady, a typical brunette, who was first married to a gentleman, a typical blonde. She was never pregnant by him. Subsequent to his death she married a gentleman as marked a brunette as herself. Her first child was a decided blonde. Both her own and her husband's relatives are all brunettes. The lady has since had three children all brunettes.

The third case was that of a lady who during the first month of pregnancy had been much worried over her oldest daughter who had had her ears bored for rings. The ears became inflamed and caused much trouble. When the child was born both ears presented the appearance of having been pierced for rings, and through at least one of the lobes a thread could be passed.

Case fourth was that of a lady who at a very early period of pregnancy was much impressed by seeing three ladies, all of whom had hare-lips. When her child was born it had a double hare-lip.

Case fifth, Mrs. X., married but a few weeks was at the theatre with her husband. Something vexing him he placed the point of his elbow on her hand and held it so firmly that she could not draw it away. Not wishing to make a scene, she bore it until she fainted. The fingers were much swollen and painful for several days. She never lived with her husband afterwards. Thirty-five weeks and three days after the theatre incident she gave birth to a son. On the left hand the first and second phalanges of all the fingers and thumb were absent, looking as if they had been amputated. During her pregnancy she had never thought that her child would be born with any deficiency.

Other reported cases were then referred to.

DISCUSSION.

Dr. William Goodell, of Philadelphia. I have been very sceptical on this subject, but I have seen one case which seems to bear out the theory. A physician was called upon to assist at the operation of circumcision. His wife, who was in the early months of pregnancy was much interested in the operation and insisted upon having all the detail. The operation and its cruelty occupied much of her thoughts. When her child was born, a boy, it was found that the gland was exposed, the prepuce well retracted with granulating edges, showing the appearance very similar to that of a recent circumcision.

I have recently seen an almost identical condition in a child, which could not be accounted for by any impression on the mind of the mother.

Dr. Samuel C. Busey, of Washington. While I have no positive convictions to present, I believe that there is some relation between mental impressions and fœtal deformities. Any prevalent and concurrent belief must be based upon an element of truth. This belief has prevailed since the time of Jacob. At the present time it is a fixed belief in the female mind. In the physical world there is no effect without a cause, and in the world of life the rule is the same. If we can demonstrate in any single instance one connection between the deformity and the mental impression, we must concede that such a thing can again occur. If there are any number of cases where we can show a precise correspondence between the impression and the deformity, the relation must be accepted as presumptively proven. Dr. Barker has cited some instances, and Dr. Goodell has given another case. In another case the mother while pregnant saw a man with an opening in his trachea, from which a tracheotomy tube had been removed. The child when born exhibited a depression in the same position. Another case is reported where the mother received two distinct impressions, and the child was born with two distinct deformities corresponding to the separate impressions received. In another case, the father had removed, in the presence of his mother, a metacarpal bone of one of the fingers. When the child was born it exhibited a corresponding deformity. A consideration of these cases can bring us to but one conclusion. The earlier in pregnancy the impression occurs the more frequently does the deformity follow, and the greater is the correspondence between cause and effect.

The discussion was then postponed until afternoon.

AFTERNOON SESSION.

Dr. John Billings, of Washington. There are many cases on record which cannot be explained by any knowledge which we now have. As to the influence of previous pregnancies on the characteristics of subsequent pregnancies, we have no scientific information. If we could obtain the statistics showing the characters of children born of different fathers we should have some scientific data on which to form an opinion.

Dr. Fordyce Barker, of New York. In all the cases I have reported there is no evidence that the period since conception had been more than six weeks. I have rejected all cases in which conception occurred three or four months before the mental impression was produced.

(To be continued.)

Medical and Surgical Journal.

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THE FORMATION OF NEW TISSUE FROM ASEPTIC BLOOD-CLOTS.

THAT blood-coagula will organize and form new tissue after a destructive operative procedure, is the new phase in wound treatment presented by Schede at the last Congress of German Surgeons. Accustomed as we have been to regard blood-clots as foreign bodies to be carefully removed from a wound, this statement is somewhat startling; but after reading Schede's carefully-observed results, and remembering that hæmatoma of large size not infrequently disappear, and that it has long been known that blood-clots in an aseptic wound are innocuous, we feel somewhat prepared to accept Schede's remarkable statement.

His reported results are almost marvellous; the blood fills the wound cavity completely, clots, and is gradually replaced by permanent tissue formation, without further wound secretion. By this method, resections of large joints have healed by primary union, large portions of the articular ends of bone, with the whole of the cartilage surface, have been removed without impairment of the articular function.

Two hundred and forty-one operations are recorded by Schede, and nearly all of these have healed under one dressing by primary union; among the operations performed are the removal of large sequestra from bone, the erasion of fungous granulations from the sheaths of tendons, the division of all the soft parts, including the astragalo-scaphoid ligament (Phelps's operation), and many excisions of joints and removals of tumors.

Especially adapted to this method of treatment are wounds of bones, joints, and cavities having stiff walls; it is not advisable in wounds of the soft parts. To secure these results, one must completely remove all diseased (tubercular) tissues and all foreign bodies (sequestra or fragments of bone) from the wound, which must be aseptic, accurately filled with blood from parenchymatous bleeding, and provision should be made for the escape of an excess of blood by overflow drainage openings, situated at the highest point of the wound surface; finally, one must, as far as possible, favor the evaporation and drying of the excess of blood by the dressing. Of course, to obtain such results, one must follow carefully the plan laid down by Schede for operative procedure. This we will give somewhat in detail; for example, a limb is exsanguinated by an Esmarch's bandage, the knee-joint is resected, visible arterial lumina are secured, the tourniquet is loosened and spurting points are ligated, and the cavity of the wound is allowed to fill with blood. Then all tissues from the periosteum to the skin are carefully approximated. No drainage-tube is used. The wound is covered with silk protective, which must lie perfectly smooth, and this is covered with a sublimate gauze dressing, interposed with layers of cotton batting, which is secured in place by rollers of antiseptic gauze; a splint is applied to the back of the leg, extending from a foot-piece to the waist, and this is finally secured in position by plaster-of-Paris bandages. Schede has resected forty large joints, with thirty-seven typical recoveries; and he has never been obliged to change this dressing from leaking of blood or wound secretion. Bone cavities, however, are treated in a little different manner, in that the skin and soft parts are caught together, with appropriate intervals for the escape of an excess of blood. Over the blood-filled cavity is accurately adjusted a piece of silk protective one or two centimetres larger than the wound; this serves a double purpose, in that it secures the accurate filling of the wound with blood and prevents evaporation and drying of the blood-clot, within the cavity of the wound. The silk protective is covered with the dressing as applied to the knee-joint. If any doubt exists regarding the asepticism of the wound Schede advises packing it with iodoform or sublimate gauze until it can be made so, then when good granulation tissue appears he scrapes out the wound and allows it to fill with blood which he covers in with silk protective as above and considers that he materially hastens the healing of the wound.

Schede considers the failures which have followed his treatment to be due: First, to the incomplete filling of the wound with blood; this can be avoided by loosening the Esmarch before applying the dressing. Second, to the recurrence of tuberculosis in wounds from incomplete removal of diseased tissues, for instance, in severe cases of general tuberculosis the coagula will not organize. Third, the failure to remove all foreign bodies from the wound, sequestra, etc., which may cause fistula in the cicatrix. Fourth, there is occasionally a fungous degeneration of the cicatrix as in wounds otherwise treated.

We are certainly indebted to Schede for boldly acting on his conviction that blood-clots will organize and form new tissue, and his eminently satisfactory results should attract the attention of all practical surgeons.

A MEDICAL VIEW OF THE TEMPERANCE QUESTION.

SUCH was the title of the brief, but comprehensive and suggestive paper read by Dr. Francis Minot, of Boston, at the American Unitarian Conference at

Saratoga, September 22d. The care and accuracy which characterized the statements of this paper caused it to appear in striking contrast with much that has been paraded before the public on such occasions as fact and science.

Against the popular view that alcohol is, under all circumstances, and especially to the healthy human system, a poison, Dr. Minot contended that a moderate quantity of pure ethyl spirit, well diluted, may be taken daily by healthy individuals without harm. This is the view defended by the late Dr. Austin, and by a great majority of physicians, and it is in accordance with the experience of many natures.

This admission, however, did not appear in the mind of the essayist to make total abstinence, as a general principle, any the less a matter of expediency, and often of positive duty. The word *moderation* is a vague and indefinite term, which, in some individuals, may connote almost an infinitesimal quantity of alcohol ingested, the excess-margin being speedily reached.

The pathological effects of alcohol, when taken in excess, pertain especially to the digestive tube, the liver, the heart, and bloodvessels, and above all, the brain and nervous system. But while the drunkard's "petuitous dyspepsia" is common enough, Dr. Minot failed to find evidence that ulcer and cancer of the stomach (two quite frequent gastric affections) were ever caused by alcohol. In his opinion, too, cirrhosis of the liver is a comparatively rare affection, although, when occurring, it is generally of alcoholic origin. Bright's disease of the kidneys is less frequently due to abuse of ardent spirits than has been supposed

Cardiac and vascular degenerations (atheromatous diseases) find their most frequent source in intemperance. But it is on the delicate nerve-cell and fibre that alcohol exerts its most pernicious influence. Not only are meningeal inflammations and insanity due to the irritation of alcohol, but there are minor cerebral alterations, which find expression in change of character, in inaptitude and disrelish for the higher exercises of mind, in action deriving its motive from the lower propensities.

Among the causes of alcoholism, Dr. Minot gave great emphasis to the predisposing, the principal of which is heredity. Multitudes (and the essayist thought the majority) of the victims of this deplorable vice derive from their parents or ancestors that instability of nervous organization which renders the appetite, when once formed, a controlling one; in such persons, drunkenness readily becomes a disease, comparable to other nervous diseases of a more or less periodical nature.

The therapeutical aspect of the question the lecturer did not touch upon, but hinted at its immense importance. As for treatment, the truth was recognized that vastly more can be done by prophylaxis than in any other way, and this especially in reference to the multitudes who are organically predisposed to alcoholism. Here a timely warning may save a life from ruin.

It would be well if Dr. Minot's address could be issued in the form of a tract for distribution in the public schools, and as an antidote to much of the trash that is now taught there in the name of science.

MEDICAL NOTES.

— The new medical practice law in Iowa is, as might be expected, meeting vigorous opposition from the advocates of "liberty." In a recent examination of a candidate for a license, among many other interesting replies were the following on midwifery, according to the report of a Western contemporary: "He was asked if he had ever attended any case of labor; he replied that he never did a day's work. His wife said that he had always been lazy, but that during the summer he had pitched three loads of hay. He was then asked if he had had any cases of obstetrics in the past year, and replied that he had not. He was then asked if he knew of any case of obstetrics occurring in his neighborhood during the past fifteen years, and replied, after deep thought, that he did not."

— M. Paul Leroy-Beaulieu, in an interesting paper in the *Economiste Français*, quoted in the *British Medical Journal*, gives the following figures, showing the quantity of tobacco consumed in the different countries of Europe, and the rate per 1,000 inhabitants is, according to him, as follows: Spain, 110 lb.; Italy, 128 lb.; Great Britain, 138 lb.; Russia, 182 lb.; Hungary, 207 lb.; France, 210 lb.; Denmark, 224 lb.; Norway, 229 lb.; Austria, 273 lb.; Germany, 336 lb.; Holland, 448 lb.; and Belgium, 560 lb. In other words, while in Spain little more than 1 lb. per head is consumed, nearly double that quantity is consumed in France, three times as much in Germany, four times as much in Holland, and five times as much in Belgium.

— The desideratum of a process for the synthetical manufacture of quinine, has, according to the *Lancet*, apparently been secured. The synthetical manufacture of quinine was first suggested to Mr. Cresswell Hewett in 1869 by the late Dr. Mattheson, of St. Bartholomew's Hospital, whilst giving his assistance in a course of experiments in connection with apomorphia. Subsequently, Professor Parkes of Netley, aided with his advice, and to these gentlemen, rather than to himself, Mr. Cresswell Hewett modestly explains that the process is due. The importance of this discovery is rendered greater by the fact that, while hitherto we have been depending for our quinine on the cultivation of the cinchona tree, from whose bark only about two per cent. of good quinine can be extracted, 98 per cent. being valueless, the drug can now be manufactured without limit by a very simple process from an article which can always be got in abundance in any part of the world. Mr. Hewett, it is said, intends to put himself in communication with the British government, who annually spend in India

alone about £60,000 in the cultivation of the cinchona tree. His process, it is claimed, will produce the drug for 3*d.* per ounce.

— We learn by an account in a recent issue of the *New York World* that another rare and wonderful operation has been performed with brilliant results. This time it was a very painful cancer, situated in the dangerous locality of the breast. The skilful surgeon at the hospital was willing, however, to take all risks to save the life of the patient. The incisions were carefully and judiciously made "in the direction of the fibres of the great pectoral muscle," the slightest deviation of the blade inviting death. The knife was carried "around the diseased mass in such a manner as to include *every part of it*, the lower incision being made first." The pectoral muscle was "thoroughly exposed by the removal of its fibrous envelope." "Strict antiseptic precautions" were observed, and, *mirabile dictu*, the wound "healed by first intention," without any increase in the temperature. All this shows what advances are constantly being made in our noble art by bold and skilful surgeons. We hope, however, that success will not make some of our operators too bold. Who will be the first one to tackle "a wen?" — *N. Y. Med. Record.*

— A case of attempted suicide from acute mania, recently treated in one of the New York hospitals, has served to call renewed attention to the hardships of the life of stokers aboard ocean steamships. A rather intelligent English circus performer, finding himself getting too corpulent for the requirements of his calling and believing that much hard exercise in a very high temperature would rid him of flesh, decided to make the ocean passage as a fireman in a steamship, and obtained the opportunity he desired. The fire room on a steamer is away below the water line, where ventilation is impossible, or at least unattempted. The temperature ranges from 135° to 175°, and in that atmosphere the men are required to shovel coal eight hours in every day — two stretches of unceasing and heavy work of four hours each in the twenty-four. The man in question was advised that he could not stand the exhaustive labor, but he was not to be dissuaded. Several times he fell fainting on the hot floor of the fire room, but always insisted on resuming his duty. When within a day of port, in a fit of mania, he rushed from the heat, climbed to the deck and leaped over the rail into the sea. Sailors rescued him, but he had to be kept manacled during the remainder of the trip.

NEW YORK.

— While a certain evangelist from Michigan, who has been holding a series of revival and "faith cure" meetings at Peekskill on the Hudson, was recently treating Mrs. Julia Hart, of that place, for disease of the heart by anointing and the laying on of hands, the patient suddenly fell backward and almost instantly expired.

— The Charities Commissioners of Brooklyn, three in number, have now been indicted by the Grand Jury for their neglect of the insane under their care, while the Board of Supervisors have been warned that they must take immediate action for the relief of the overcrowded condition of the city asylum at Flatbush. The Commissioners are accused of wilfully neglecting to provide safe and suitable accommodations, care, and attendance for this class of patients. The indictment specifies that they have failed to provide proper means of escape from the buildings in case of fire. Also that some of the insane are compelled to sleep in the cellar, with a totally inadequate provision of competent nurses and attendants, and that the plumbing and the sanitary arrangements of the buildings in general are defective. The indictment was drawn up under the section of the Penal Code (No. 117), which provides that a public officer or person holding a public trust or employment upon whom any duty is enjoined by law, and who wilfully neglects to perform such duty, is guilty of a misdemeanor. A fine of $1,000, or not more than one year's imprisonment, or both, with a forfeiture of office, is the penalty in case the Charities Commissioners should be convicted.

In regard to the Board of Supervisors, the Grand Jury states, in its presentment, that it will be held to be a neglect of duty by the Board should it fail to do all in its power "to remedy the fearful state of the Flatbush institution resulting from over-crowding," and urges the Supervisors to push the completion as quickly as possible of two new buildings which are now in course of erection at St. Johnsland, Long Island. The action of the Grand Jury is largely the result of a night visit recently paid by that body to the asylum at Flatbush, when a thorough examination of the existing condition of affairs was made. The buildings were found to be over-crowded to an unprecedented extent, and some of the unfortunates were quartered in damp rooms and cellars. The sewerage of the institution was ascertained to be especially bad, and it was evident that through its sewerage connections the health of the city of Brooklyn and the neighboring towns was endangered. The Charities Commissioners throw the blame for this disgraceful state of things upon the Board of Supervisors, claiming that they have done all that they could under the circumstances, and that they had not the power, without the sanction of the Supervisors, to make the improvements which have for a long time past been necessary. Among these were included the transfer of a large number of the inmates to the county farm.

PHILADELPHIA.

— Dr. E. O. Shakespeare has returned from India, whither he had been sent by the Government on a special mission to study the etiology of cholera. A reception was tendered to him by his medical friends of Philadelphia and vicinity, on September 30th, at the Hotel Bellevue, which was attended by many of the principal members of the profession.

— With the first week of October, our medical

schools close their preliminary course of lectures and settle down to the regular routine of work for the winter. The introductory lecture at the Jefferson College was given by Dr. William S. Forbes, Professor of Anatomy, on the 30th of September; at the University of Pennsylvania, Dr. E. T. Reichert, Professor of Physiology, delivered the introductory on the 1st of October, and the Medico-Chirurgical College followed on the 4th inst., Dr. William H. Pancoast, Professor of Anatomy and Clinical Surgery, being the orator of the occasion. The introductory at the Women's Medical College was delivered on the 7th, by Dr. William W. Keen, Professor of Surgery. The prospects for large classes of students are said to be better than they were last year. The opening of the clinical lecture course at the Pennsylvania Hospital took place on Saturday, the 2d inst., demonstrations were made by Drs. Arthur V. Meigs and Thos. G. Morton, in medicine and surgery. The remarks of Dr. Morton were important, as he devoted the hour to a consideration of the modern treatment of wounds by aseptic dressings which had revolutionized practice in this hospital. He presented a patient who was well and ready to be discharged, who three weeks before had been brought into the Hospital suffering with a compound comminuted depressed fracture of the skull in the right parietal region. The corrosive sublimate (1-2000) douche was used to cleanse the wound, some fragments of bone lifted and removed, and the wound brought together, and covered with iodoform gauze. There was no rise of temperature, not a drop of pus, and the wound had completely united at the end of twenty-four hours. No symptoms were noticed subsequently. Amputations and compound fractures are dressed with due care to preserve perfect asepsis and left undisturbed for three weeks, when they are usually ready to be discharged. The economy in the matter of bandages over the old method with its daily dressings, is evident, but it is not to be mentioned when we consider the greater safety to the patient and shorter period of stay in the hospital, required by the new treatment. In deep wounds and amputations, carbolized cat-gut filaments are used to obtain drainage from the bottom of the incision of the stump. The results which Dr. Morton presented were strong evidence of the value of the treatment.

Miscellany.

THE CENTENNIAL OF THE ROYAL MEDICAL SOCIETY OF ATHENS, GREECE.

A CIRCULAR, in Greek, addressed to a corresponding member, from the Royal Medical Society of Athens, Greece, announces that the society proposes to celebrate the centennial of its present scientific existence on the 22d and 23d of March next, 1887.

The circular requests the assistance of kindly disposed medical men — by scientific papers, or contributions of interest to the profession; and asks an early communication of titles, etc., that such may appear in the programmes for the occasion.

It is an active and earnest society,— well worthy of high professional regard, and we trust that its request will not pass unheeded; surely some American physicians may be able to give some account of what the profession here has done in the last hundred years, and is still doing.

We shall be happy to be the medium of transmitting any contributions that may be offered.

DIAPHRAGMATIC HERNIA.

THE *Lancet* (Sept. 18) reproduces from *Il Bullettino della Reale Accademia Medica di Roma* (May, 1886, p. 245) a description by Dr. Farraresi, of a diaphragmatic hernia revealed in the necropsy of a young man who had died with symptoms of intestinal strangulation. On surface inspection of the well-nourished body, it was noted that the abdomen was only slightly swollen; the left half of the thorax was broader and more prominent than the right, and the left intercostal spaces dilated. Percussion revealed an area of absolute dullness over the whole left chest, excepting the subclavicular triangle, which yielded tympanic resonance. On opening the abdominal cavity, the coils of small intestine, slightly reddened, presented patches of fine basal injection. Carefully opening the thorax, the left pleural cavity was found filled with a bloody liquid, on giving exit to which the lung, compressed and driven upwards, became visible, the heart being displaced to the right. Besides the liquid already referred to, the pleuritic cavity contained numerous coils of intestine enormously distended, of dull red color; the serous membrane was opaque, rough, and studded with numerous hæmorrhagic spots. The stomach was displaced to the right, with the great curvature turned towards the abdominal wall. Holding aside the stomach and the small intestines, still retained in the abdomen, it was observed that the splenic angle of the colon, and a good part of the jejunum passed into the pleural cavity through a hole in the left inferior half of the diaphragm, at a point corresponding to the normal position of the heart's apex. The descending colon was much contracted. With great difficulty, and after repeated punctures, it became possible to reduce the coil of colon, a piece of omentum, and the displaced small intestine. The hole in the diaphragm was oval, rather more than an inch in diameter, surrounded by a strong, thick, fibrous ring. The gastro-colic omentum which followed the displaced coil was shortened, and adherent posteriorly to the margin of the fibrous ring.

THE LAY PRESS AND QUESTIONS OF PUBLIC HEALTH.

THE *Sanitary Engineer*, speaking of the relation of the daily papers to the accomplishment of sanitary improvements, points out that progress in the improvement of health, the diminution of sickness, and the lengthening of life depends in part on the increase of human knowledge of the laws of physics, chemistry, and biology, and in part on the diffusion among the people of the practical deductions from this knowledge. Sanitary legislation and improvements for any

given community must be regulated very largely by the opinion of the majority of the taxpayers and voters in that community as to the necessity for them, and hence to obtain action for securing a purer water-supply or a better system of sewage disposal, it is not sufficient that a few skilled engineers and physicians are satisfied of the need of the improvement, and of its practicability at a reasonable expense, but the people, from whose hands the funds are to come, must also be "educated up" to the requirements of the situation. This is, of course, a legitimate and an important mission for the public press. That it is often most worthily discharged is thankfully admitted. But that this responsibility is also liable to abuse, is well pointed out by our contemporary.

"The chief defect of newspaper sanitary literature, taken as a whole," it says, "is its tendency to exaggeration and sensationalism, and its liability to be dictated or inspired by a desire for an advertisement. The man who is interested in a patent filter is ready to furnish a column or two on the impurities of the water-supply, with, it may be, a few choice engravings representing strange forms which he tells the shuddering public are entomostraca, desmids, etc. He is careful not to explain that these organisms live in pure water — in fact, that they cannot live in water that is very impure. The man with a patent trap wants to arouse the people to a sense of the dangers of sewer-gas; the dairyman wants to explain the poisonous properties of oleomargarine; the man who failed to get the appointment of health inspector wants to show up the negligence of the health department, and each and all of them do the best they can to get some newspaper to publish their philanthropic essays.

"To those who know how much of this sort of matter is floating round in manuscript form in our large cities the wonder is, not that our newspapers should publish so much rubbish in the way of sanitary letters, etc., but that they should publish so little as they do, and when alarming stories alleging a dangerous condition of the Croton water appear in our daily papers it is safe to assume that the editor has been deceived, or the business department have inserted the matter as 'a reading notice' at so much a line."

CONDITIONS AFFECTING THE GROWTH OF MICROBES IN POTABLE WATER.

The *Polyclinic* for September, discussing this subject editorially, after referring to the increasing importance attached by sanitary chemists of late to the study of organic life in drinking waters over and above that of the mineral or even the decaying organic material, speaks of the method of Koch, which has been made known through the published labors of various workers; this consists essentially of adding to nutritive gelatine, under all necessary precautions, a known amount of water, and placing the mixture so that the existing organisms can multiply. By using a large amount of nutritive gelatine and spreading over considerable surface, each microbe becomes an independent centre of development, and after a time the number of "colonies" can be counted and the mode of growth also noted. Up to the present time the number of facts at our command is not sufficient to give great practical value to this method, since, among other points, it is clear that many species of microbes are harmless or even beneficial. It has generally been held that those which liquefy the gelatine are objectionable, and large numbers, even of the non-liquefying forms, suspicious.

While the practical results, as yet, are not fully attained, valuable information has been obtained as to the changes which various natural conditions, transportation, storage, filtration, etc., exercise on water. The experiments of Percy Frankland and others have shown conclusively that great benefit follows not only the filtering of water, but even the process of subsidence of the solid matter naturally or artificially suspended in it. From observations recently made by Dr. C. Leone in the laboratory of Pettenkofer, it appears that in a drinking water of the highest class, a rapid increase of microbes may take place for a few days. The water which Leone experimented on contained, as drawn from the hydrants, five microbes per cubic centimetre, which in five days increased to hundreds of thousands, and then began to decrease. He found, further, that the presence of free carbonic acid, especially under pressure, almost entirely prevented this increase. Various experiments which are detailed in Dr. Leone's paper (*Archiv. f. Hyg.*, No. 2, 1886, also *Gaz. Chem. Ital.*) indicated that restraining influence was not due to the absence of oxygen, and further showed that certain bottled mineral waters rich in carbonic acid were poor in organic life.

As observed above, continues our contemporary, the facts are not yet sufficient to justify us in founding dogmatic positions; but if observations, of which Frankland's and Leone's are the type, are confirmed and extended, they will be of great utility in sanitary engineering. At the present time, we may say that evidence is to the effect that the most important part of a water-supply system, outside of the all-important point of a pure source, is abundant storage and filtration appliances. There is, indeed, no reason why cities and towns should not be provided with facilities for thirty days' supply at least.

THE MEDICO-LEGAL ASPECTS OF SUICIDE IN LIFE INSURANCE.

We notice an interesting article on life-insurance from a medico-legal point of view by John A. Clark, Esq., in the *Polyclinic* for September, from which we take the following extracts on suicide as related to life risks:

It is almost universally the practice to insert in policies of insurance a clause providing forfeiture in case of "suicide," or of the insured dying by his own hand. The question now arises, how far suicide produced by insanity falls within these exceptions. In England it has been decided that the expression, "died by his own hands," covers all cases of intentional suicide, whether or not the party so dying was conscious at the time of the wrongfulness of his act. This view has been repudiated by the Supreme Court of the United States, which said: "We hold the rule on the question before us to be this: If the assured, being in the possession of his ordinary reasoning faculties, from anger, pride, jealousy, or a desire to escape from the ills of life, intentionally takes his

own life, there can be no recovery. If the death is caused by the voluntary act of the assured, he knowing and intending that his death shall be the result of his act, but when his reasoning powers are so far impaired that he is not able to understand the moral character, the general nature, consequences and effect of the act he is about to commit, or when he is impelled thereto by an insane impulse which he has not the power to resist, such death is not within the contemplation of the parties to the contract, and the insured is liable, nor," said the justice, "do we see any difference, for this purpose, in the meaning of the expressions, 'commit suicide,' 'take his own life,' or 'die by his own hand.'" In New York it has been held that to take a case, on the ground of insanity, out of the proviso, the insured must have been so mentally disordered as not to understand that the act he committed would cause his death, or he must have committed it under the influence of some insane impulse which he could not resist. Of late, insurance companies have endeavored to guard themselves against insane suicide by extending the proviso to read: "If the insured shall die by suicide, sane or insane," etc. It is unquestionable that the companies have a right to insert this proviso, and it has been held that the only construction to be given to these words, is the one that they bear on their face, namely, that the company, in case of a suicide, is to be exempt from all liability; but this does not apply to cases of unintentional self-destruction.

In a letter from Horace Walpole to Bentley, dated January, 1755, we have the following extraordinary story which was told to him in reference to a case of suicide. It appears that at this time there was an office in England for insuring lives even in cases of wilful suicide, but to an amount not exceeding three hundred pounds. A certain man insured his life, and then invited the insurers to dine at a tavern where they met several other persons. After dinner he said to the life and death brokers: "Gentlemen, it is fit you should be acquainted with the company; these honest men are tradesmen to whom I was in debt, without any means of paying but by your assistance, and here I am your humble servant." He then pulled out a pistol and shot himself, thus showing his honesty to his creditors. Similar agreements of insurance, however, have been held void, as against public policy.

Whether death has been produced by natural causes or as the result of suicide, is sometimes a question which has perplexed courts and juries. The burden of proof in all such cases is on the insurer, to show that the death was not natural, but was the result of suicide. The question here arising is one of fact, to be determined by the jury, under the direction of court. If the case is in equilibrium, the presumption is against suicide.

IN MEMORY OF DR. F. H. HAMILTON.

THE Society of Medical Jurisprudence and State Medicine held a meeting in memory of Dr. Frank H. Hamilton, its late president, at the Hall of the Academy of Medicine, September 30th. The opening address was made by the Hon. Amos G. Hull, vice-president of the Society; after which Dr. Charles A. Leale, president of the New York County Medical Association, delivered an extended eulogy of Dr. Hamilton, in the course of which he gave an exhaustive review of his career and his eminent services to surgery and to the profession and society at large. The secretary, Dr. G. W. Wells, then read a tribute to the deceased prepared by Gen. Calvin E. Pratt; which was followed by brief addresses by Drs. Austin Flint, John Shrady, C. S. Wood, Nathan Bozeman, Messrs. Kitchell and Russell, and by other members of the medical and legal professions.

The following resolutions were adopted which were offered by Dr. Leale, who was the chairman of the Committee of Arrangements for the memorial meeting.

Whereas, The medical and legal professions have sustained a sad bereavement in the death of Professor Frank Hastings Hamilton, A.M., M.D., LL.D., late President of the Society of Medical Jurisprudence and State Medicine, which occurred at his residence on the eleventh day of August, 1886; and

Whereas, It is eminently proper for us, in our associated as well as private relations to express our great admiration of the life and character of one who has done so much to elevate Medico-Legal Science, therefore;

Resolved, That as a Society composed of members representing two of the learned professions which he labored so hard to advance and harmonize, we add our tribute of loving esteem;

Resolved, That Dr. Hamilton from his pre-eminent talents, and his position as a teacher, writer and practitioner, covering a period of over half a century, has been the means of deciding many perplexing questions coming properly within the jurisdiction of our Society, and has thereby greatly relieved the professions from the malice of unwarrantable litigations;

Resolved, That the humanity, benevolence and fixedness of purpose exhibited during many years of constant professional toil under numerous trying circumstances, ever with the sincere desire to promote his art and benefit mankind, have ennobled his character, and left to us a name worthy of our highest emulation;

Resolved, That the example of his life, diligent study in early youth, manifest desire to acquire knowledge by carefully searching the Museums of America and Europe for anatomical specimens to settle disputes in surgical pathology, his translations of foreign medical works, his careful and accurate teachings united with a stern integrity ever to be truthful, and last, but not least, his monumental volumes on Fractures and Dislocations which have been the standard works recommended by colleges at home and abroad, and remain to-day unequalled in surgical literature, having been translated into many foreign languages, and are the acknowledged authorities wherever surgery or medical jurisprudence are taught — these with many other honorable characteristics have justly endeared his memory to every true and faithful member of our professions, and placed his name upon the scroll of the illustrious men of the first century of American history.

"Dr. Hamilton," said Mr. Hull, in his remarks, "was a great and good man. He was great because he was good. He was a public benefactor. He was not rich; but, thank God, we are not so degenerate that a man needs to be rich before he can become a public benefactor."

Correspondence.

A HINT TO OCULISTS FROM THE ALMOND-EYED ASIATIC.

MR. EDITOR, — As a hint to oculists and that, too, from our Western neighbors, the Chinese, the following may be of interest:

A Chinese cook in our employ had suffered repeatedly from attacks of conjunctivitis owing to his labors over a hot cook-stove. These were soon cured by the use of collyria of borax and camphor, and a caution as to the real cause. But only to return. To our surprise not long ago he appeared in large Chinese spectacles, tortoise-shell rims and plates of mica, transparent and non-magnifying. With these he goes happily to his work, and so far with no fear of a return of the conjunctivitis, and reasonably too, as mica is notably a protector against heat. Consulting stan-

dard works on ophthalmology I find no reference to their use in occupations exposing one to conjunctivitis from heat, and the idea is certainly worthy of our remembrance.

G. C. SIMMONS, M.D.

SACRAMENTO, CAL., Sept. 26, 1886.

THE REUNITING OF SEVERED DIGITS.

WORCESTER, Sept. 29th, 1886.

MR. EDITOR,— The following case is unique in my practice and may interest your readers.

A young man in a neighboring factory had a finger cut off by a large paper-cutter. He brought the exsanguinated piece to me wrapped up in his handkerchief. It was three-fourths of an inch long, and included the nail and perhaps one-half inch of the last phalanx. With little expectation of success, I adjusted the amputated piece to the stump and now, after ten days, it is firmly adherent, the renewed circulation showing plainly at the finger tip.

Perhaps you can inform me whether such an experience is common. Sincerely,

WILLIAM P. SOUTHER, M.D., Harvard, '78.

[We, in common with others, have frequently heard of such instances, but have never had one occurring in the practice of our personal acquaintances and have never been able to verify such a result. We should be happy to publish any undoubted cases. In the meantime Dr. Souther will not take it amiss if we refer him to a paper on the subject published a year or two since by Dr. F. B. Stephenson, U. S. N.— ED.]

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 25, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	615	295	27.84	12 16	17.12	2.88	4.32
Philadelphia	971,363	354	140	17.92	11.48	6.72	3.04	4.48
Brooklyn	690,000	269	141	28.49	15.54	15.91	.74	7.77
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	186	69	19.98	17.28	11.34	2.70	3.24
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	146	67	29.67	11.73	12.42	6.75	2.07
Cincinnati	325,000	135	58	22.94	14.06	8.88	1.48	10.63
New Orleans	238,000	93	26	30.52	4.36	15.12	—	2.16
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	115	41	15 66	5.68	6.09	5.22	.87
Pittsburgh	190,000	70	39	25.14	5.72	20.00	—	2.86
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	—	—	—	—	—	—	—
Charleston	60,145	47	18	19.19	2.13	6.39	10.65	2.13
Worcester	68,383	26	9	23.10	15.40	15.40	—	—
Lowell	64,051	27	13	25.90	22.20	11 10	7.70	7.70
Cambridge	59,660	29	17	34.48	10.35	24.15	—	6.90
Fall River	56,863	30	24	43.52	—	33.28	2.56	—
Lynn	45,861	20	5	10.00	—	5.00	—	5.00
Lawrence	38,825	5	1	—	20.00	—	—	—
Springfield	37,577	11	4	18.18	9.09	9.09	—	9.09
New Bedford	33,393	18	9	33.33	11.11	22.22	5.55	—
Somerville	20,922	—	—	—	—	—	—	—
Salem	28,084	11	—	36.36	—	18.18	9.09	9.09
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	9	2	—	11.11	—	—	—
Taunton	23,674	8	4	37.50	—	12.50	25.00	—
Haverhill	21,795	5	3	20.00	20 00	20.00	—	—
Gloucester	21,713	5	—	—	20.00	—	—	—
Brockton	20,783	3	1	66.66	—	66.66	—	—
Newton	19,759	5	4	—	—	—	—	—
Malden	16,407	2	1	—	—	—	—	—
Fitchburg	15,375	7	2	14.28	42.84	—	14.28	—
Waltham	14,609	5	0	—	20.00	—	—	—
Newburyport	13,716	4	2	—	25.00	—	—	—
Northampton	12,896	5	1	—	40.00	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,274: under five years of age 986: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 530, consumption 277, lung diseases 119, diarrhœal diseases 285, diphtheria and croup 87, typhoid fever 65, malarial fever 39, whooping-cough 21, cerebro-spinal meningitis 16, measles six, scarlet fever six, erysipelas three, puerperal fever two. From malarial fevers, New Orleans 10, Baltimore nine, New York, Philadelphia, Brooklyn and Charleston, five each. From whooping-cough, New York six, Brooklyn and District of Columbia four each, Boston and Baltimore two each, Philadelphia, Pittsburgh and Springfield one each. From cerebro-spinal meningitis, New York and Philadelphia, four each, Fall River three, Baltimore and Cincinnati, one each. From measles, New York three, Boston, Cincinnati and Pittsburgh one each From scarlet fever, New York four, Philadelphia and Brooklyn one each. From erysipelas, Brooklyn, Boston and Cincinnati one each. From puerperal fever, Boston and Worcester one each.

In the 22 cities and greater towns of Massachusetts, with a population of 1,032,650 (population of the State 1,941,465), the total death-rate for the week was 21.50 against 21.47 and 23.61 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending September 11th the death-rate was 22.6. Deaths reported 3,939: infants under one year of age 1 679: acute diseases of the respiratory organs (London) 110, diarrhœa 985, whooping-cough 50, fever 40, scarlet fever 46, measles 38, diphtheria 20, small-pox (London) one.

The death-rates ranged from 13.9 in Bristol to 38.1 in Preston; Birkenhead 24.6; Birmingham 25.9; Hull 27.5; Leeds 26.2; Leicester 34.8; Liverpool 30.4; London 16.5; Manchester 31.0; Newcastle-on-Tyne 27.9; Nottingham 31.9; Sheffield 31.0.

In Edinburgh 16.4; Glasgow 22.7; Dublin 25.9.

For the week ending September 11th, in the Swiss towns, there were 29 deaths from consumption, diarrhœal diseases 26, lung diseases six, diphtheria and croup four, whooping-cough and scarlet fever each two, typhoid fever one.

The death-rates were: at Zurich 13.4; Geneva 12.1; Basle 13.3; Berne 18.2.

The meteorological record for week ending September 25, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Sept. 25, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, ... 19	30.062	66.0	71.0	54.0	72.0	67.0	85.0	75.0	S.E.	S.	W.	8	14	20	C.	F.	O.	—	—
Monday, ... 20	29.959	55.0	72.0	47.0	64.0	43.0	58.0	55.0	N.W.	N.W.	W.	16	24	8	C.	F.	C.	—	—
Tuesday, .. 21	30.103	53.0	65.0	43.0	63.0	33.0	57.0	51.0	W.	W.	N.	10	18	10	C.	C.	C.	—	—
Wednes.. 22	30.258	51.0	60.0	41.0	68.0	32.0	73.0	58.0	N.W.	N.W.	W.	10	6	5	F.	C.	F.	—	—
Thursday, 23	30.149	52.0	53.0	49.0	93.0	100.0	93.0	95.0	S.	N.E.	N.	4	16	9	R.	R.	O.	—	—
Friday, ... 24	30.199	59.0	70.0	48.0	93.0	47.0	87.0	76.0	N.W.	W.	N.W.	5	8	5	O.	C.	C.	—	—
Saturday, 25	30 308	52.0	58.0	51.0	68.0	65.0	75.0	69.0	E.	S.E.	S.	16	9	10	F.	O.	O.	16.50	1.50
Mean, the Week.	30.860	55.4	64.0	47.1				68.4											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 25, 1886, TO OCTOBER 1, 1886.

BACHE, DALLAS, major and surgeon. Granted leave of absence for twenty-five days, to take effect on or about October 2, 1886. S. O. 143, Division of the Atlantic, September 24, 1886.

APPEL, DANIEL M., captain and assistant surgeon. Assigned to duty at Fort Davis, Texas. S. O. 133, Department of Texas, September 22, 1886.

GANDY, CHARLES M., first lieutenant and assistant surgeon. Assigned to duty at Fort Concho, Texas. S. O. 131 Department Texas, September 18, 1886.

WALES, PHILIP G., first lieutenant and assistant surgeon. Leave of absence extended to include November 5, 1886. S. O. 226, A. G. O., September 29, 1886.

MASON, CHARLES F., first lieutenant and assistant surgeon. Ordered for temporary duty at Fort Verde, Ariz. Ter. S. O. 90 Department of Arizona, September 20, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING OCTOBER 2, 1886.

GUITERAS, D. M., passed assistant surgeon. To Receiving Ship "Franklin" for temporary duty, October 3.

WENTWORTH, A. R., assistant surgeon. Detached from Navy Yard, League Island, and to the United States Steamship "Galena," October 1.

SCOTT, H. B., assistant surgeon. Ordered to Navy Yard, New York, October 1.

ASHBRIDGE, RICHARD, passed assistant surgeon. Detached from the United States Steamship "Swatara," October 1st, granted six months' leave.

BERRYHILL, T. A., assistant surgeon. Detached from the Museum of Hygiene and ordered to Receiving Ship "Minnesota."

ARTHUR, GEORGE, passed assistant surgeon. Detached from the New York Navy Yard and ordered to the Museum of Hygiene.

PERCY, H. T., passed assistant surgeon. Detached from the United States Steamship "Galena," proceed home and wait orders.

SHAFER, JOSEPH, assistant surgeon. Detached from the United States Steamship "Minnesota," and ordered to the United States Steamship "Swatara."

STEELE, J. M., passed assistant surgeon. Detached from Naval Academy, and granted six months' leave.

BIDDLE, CLEMENT, passed assistant surgeon. Ordered to Naval Academy, Annapolis, Md.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE WEEK ENDING SEPTEMBER 25, 1886.

BAILHACHE, P. H., surgeon. Granted leave of absence for thirty days. September 25, 1886.

VANSANT, JOHN, surgeon. Granted leave of absence for thirty days. September 24, 1886.

BRATTON, W. D., assistant surgeon. Relieved from duty on Revenue Steamer "Corwin," ordered to duty at Marine-Hospital, San Francisco, Cal. September 20, 1886.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — THE SECTION FOR CLINICAL MEDICINE PATHOLOGY AND HYGIENE will meet at the *Massachusetts Institute of Technology*, Wednesday, October 13, 1886, at 7.45 o'clock. Prof. W. T. Sedgwick of the Massachusetts Institute of Technology will speak upon "The Filtration of Potable Waters, with Reference to the Elimination of Organic Germs." An exhibition of the most approved forms of Filters will follow the discussion, among others the American Filter, the Cheevan Filter, the Vitrified Filter, the "Filter Rapide," used by Gen. Wolseley in Africa, etc., all of which will be in practical operation. The only Micro-membrane Asbestos Filter in the United States will be exhibited at this meeting. The public is cordially invited to be present.

ALBERT N. BLODGETT, M.D., *Secretary*.
F. I. KNIGHT, M.D., *Chairman*.

GYNÆCOLOGICAL SOCIETY OF BOSTON. — By invitation of Dr. H. O. Marcy and Dr. E. W. Cushing, the next meeting of the Society will be held at No. 714 Main Street, Cambridge, Mass., on October 14th, at four o'clock, P.M. Papers: Dr. W. Thornton Parker, "The Removal of a Large Vaginal Tumor," Dr. W. Symington Brown, "The Rôle of the Ovary."

H. J. HARRIMAN, *Secretary*.

MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY. — The Semi-Annual Meeting of the Middlesex South District Society will be held at Porter's Hotel, North Cambridge, Wednesday, October 13, at twelve o'clock. Papers will be presented by: Dr. E. Farnham, "Athletics and Physical Training." Dr. C. H. Cook, "The Physical Education of Girls." Dr. C. C. Foster, "Notes on Caries of the Spine." The Censors of the Society will meet at the same place at eleven o'clock, A.M., of the same day to consider applications for admission to the Massachusetts Medical Society. Dinner at two o'clock, P.M. The telephone number of the hotel is 7294. WALTER ELA, *Secretary*.

BOOKS AND PAMPHLETS RECEIVED.

Galvano-Cautery in Diseases of the Prostate, Bladder and Urethra. By Robert Newman, M.D., of New York. Read in the Surgical Section, at the Thirty-Seventh Annual Meeting of the American Medical Association. Chicago. 1886. (Reprint.)

The Student's Guide to the Practice of Medicine. By M. Charteris, M.D., Professor of Therapeutics and Materia Medica. Glasgow University. Fourth Edition. London: J. & A. Churchill. 1885.

Von Ziemssen's Handbook of General Therapeutics. In Seven Volumes. Vol. V. General Orthopædics. Gymnastics and Massage, by Prof. Dr. Friedrich Busch. Hydrotherapeutics, by Dr. W. Winternitz. New York: Wm. Wood & Co. 1886.

The Healing of Arteries after Ligature in Man and Animals. By J. Collins Warren, M.D., Assistant Professor of Surgery, Harvard University; Surgeon to the Massachusetts General Hospital; Member American Surgical Association; Honorary Fellow Philadelphia Academy of Surgery. One Volume. 184 Pages. Illustrated with 12 full-page plates in black and colors. New York: Wm. Wood & Co.

BOUND BY MEDICAL LIBRARY ASSOCIATION OF BOSTON

Original Articles.

NOTES ON SYPHILIS OF THE NERVOUS SYSTEM.[1]

BY JAMES J. PUTNAM, M.D.

In looking over the cases of epileptiform seizures with pretty distinct history of syphilis, I find five of which it might at least be said that the symptoms were not incompatible with the diagnosis of true epilepsy without organic cerebral disease, though in most of them syphilis could be fairly suspected.

(1) Male patient; "venereal disease," twenty years ago, during the war; somewhat doubtful history of secondary symptoms; vertiginous attacks with loss of consciousness and followed by headache, about once a month for past year; more or less diffused headache at other times, but no other sign of cerebral disease. (Possibly with a more intimate knowledge of the patient's life other cerebral symptoms would have been noticed).

(2) Male patient; chancre,[2] nine years ago, followed by well-marked constitutional symptoms; typical epileptic attacks with loss of consciousness at intervals during past year, generally at night; frequent attacks of dizziness with buzzing in the ears, but otherwise no sign of cerebral disease.

(3) Male, forty-one years old; "chancre," twenty years ago; scars of apparently syphilitic ulcers over shins; typical epileptic attacks during past eighteen months, always at night; initial cry, loss of consciousness, biting of tongue, attacks sometimes ushered in with feeling of dizziness and "numbness" of hands; great improvement under specific treatment combined with bromide of potassium.

(4) Male patient, thirty-two years old; attacks of loss of consciousness, preceded by sense of dizziness, or indescribable sensation in the head; "chancre" two years ago followed by suppurating bubo.[3]

(5) Male patient, over thirty years old; cannot remember having had chancre, though exposed when a young man; small occipital glands, and one small epitrochlear gland. Two days ago felt tremor of the lip, and put his hand to his face, and then lost consciousness and fell.

Among the "doubtful" group of five cases, the following might be thought to be syphilitic on the grounds above mentioned:

(1) Male patient, thirty-five years old, single; epileptic attacks at intervals of one or more months, night or day, with no aura except slight sense of confusion; no neurotic antecedents. *Sometimes has pain or numbness in first and second fingers of left hand, without loss of consciousness; does not completely lose consciousness in the majority of his attacks; bears well potassic iodide in doses of thirty grains three times daily, and is benefited thereby (in combination with bromides), though he had taken much bromide previously without benefit.*

(2) Married woman of about thirty; personal and family history of perfect health; sudden attack of hemianopsia (permanent) six months before visit; occasional attacks of complete, *temporary blindness, with incomplete loss of consciousness* and sometimes paraphasia; one attack of complete loss of consciousness almost without aura. Husband has ophthalmoplegia externa, and finally admits having had syphilis; general nutrition perfect.

(3) Male, thirty-six years old; married. Illicit connection fifteen years ago, but was never aware of having a chancre. Epileptiform attacks at intervals during past year and a half, lately every few days, *without complete loss of consciousness; insomnia of late*, and *attacks of confusion in head.*

On the other hand there seems no certain way of telling whether the following cases were of syphilitic origin or not:

(1) Male, thirty-seven years old, in perfect health (private patient); gonorrhœa twice but feels sure that never had chancre, and no present signs found; typical, nocturnal epileptic attacks, with sudden loss of consciousness, at intervals of several months for the past six years (under observation and thorough anti-syphilitic treatment for past three years); no present signs of syphilis; moderate improvement under treatment, and moderate tolerance of potassic iodide.[5]

(2) Male, thirty-two years old, of perfect health and good habits; gonorrhœa in his youth but is sure that never had chancre; no present sign of syphilis: two typical epileptic attacks within the past year and a half; recalls that when about twenty years old had some sort of sickness in the night which may have been an epileptic attack.

The six cases in which there was no history or signs of syphilis, nor any reason found to suspect its presence, were as follows:

(1) Female, thirty-five years old; married. Epileptic attacks every two months for past two years, only at night; stupidity and impaired memory for several days after each attack. No history of syphilis, but record of case insufficient to make it of value.

(2) Male, forty-six years old, married. Typical attacks about once a week for four years; no history or sign of syphilis. The record of the case is insufficient absolutely to exclude syphilis, but it is interesting to note that if syphilis was present, four years is a long time for the epileptiform attacks to have occurred without other signs appearing, supposing the disease to have remained untreated which may, I think, be assumed.

(3) Female, thirty-five years old, married. Five attacks of epilepsy within the past two years, always at night; loss of consciousness; convulsion. Has been married seven years, and has four children, all well. No miscarriages; no headache or alopecia; husband living and healthy; fundus oculi normal; no sign of nephritis. Father used to drink to excess, and once had an epileptic attack supposed to be due to that cause.

(4) Female, between thirty and forty years old, married. Typical, severe epileptic attacks with loss of consciousness. No sign of syphilis discovered, although patient remained under observation for several years and did not receive anti-syphilitic treatment.

The attacks were controlled to a considerable degres by the bromides.

(5) Male, between thirty and forty years old, married. Attacks of clouding of consciousness several

[1] Concluded from page 318.

[2] This patient was only twenty-seven years old, and the case is not included in the statistical list.

[3] The diagnosis here is of course doubtful.

[4] H. C. Wood (loc. cit.) records other cases of temporary blindness of syphilitic origin.

[5] Tolerance of potassic iodide is a sign of syphilitic infection which is of only very moderate significance. It is often seen in the non-syphilitic, and with the syphilitic it is often the effect of habit.

times and one attack of complete loss of consciousness with falling. Patient's early history is opposed to the idea of exposure to possible causes of syphilis, and nothing whatever was discovered in his examination to justify that diagnosis.

(6) Male, (physician in large practice in the country), forty-one years old, married. Large numbers of typical epileptic attacks within the past year, usually occurring in groups, and always ushered in by a sense of numbness beginning in the left foot, then passing to left hand and then all over the body. No assignable cause unless it might be a hard, exposed life. Does not admit the possibility of syphilis, and no sign of it discovered.

To these six cases may be added the cases described above, of epilepsy brought on by fright.

Of these six cases of presumptively non-syphilitic origin, one (No. 4). may be thrown out as suspicious because consciousness was incompletely lost.

This leaves but five cases out of upwards of three hundred in which neither the history nor any special sign, except the advanced age of the patient at the time of the first attack, led me to the diagnosis of syphilis, and I have little doubt that more careful research would have reduced the number further, by discovering the presence if not of syphilis, at least of some other special cause, of epileptiform seizures.

While my own experience therefore, corroborates the current view, that true epilepsy does occasionally — perhaps in a few cases out of a hundred — begin in persons over thirty years of age, the rarity of such cases suggests the amount of care that is necessary in making the differential diagnosis, and in eliminating, first syphilis, then lead, next general paresis of the insane and other organic cerebral diseases, chronic nephritis, alcohol and other poisons. The presence of post-cervical or epitrochlear glands, though certainly not incompatible with health, is in my opinion very strong evidence in favor of syphilis, and among the less well-recognized signs, yellowish thickenings on the tympanic membrane, chronic choroiditis and retinitis,— not to speak of acute neuritis — may fairly excite suspicion.

My experience of the past few years has also led me to believe that chronic lead-poisoning may be a commoner cause of adult epilepsy — as it is of so many other nervous diseases — than is usually taught. I believe it to have been the sole cause in two out of the thirty-one recorded cases, beginning at thirty years of age and in another very interesting case of recurrent vertiginous attacks, with loss of consciousness and sensory paræsthesias and marked anæmia, lead was found in the urine, and the patient improved rapidly under potassic iodide. Here, syphilis had also been present, and the etiology was somewhat doubtful.

On the other hand, it seems to me equally clear that cases occasionally present themselves which are in all probability syphilitic, yet which, even after a course of years, present no certain tokens of their origin.

In doubtful cases it may be the physician's duty to use anti-syphilitic treatment, and to continue it, it may be indefinitely, under proper cautions, even though the epileptic attacks continue as before.

My observations throw no light upon the question whether epilepsy may be excited by syphilis without organic cerebral disease.

It is well known that *headache* is one of the most important signs in the diagnosis of cerebral syphilis in the early stages, and it is recognized, though I think not widely enough realized, that syphilitic headache may exist for years without other symptoms, and that these headaches, like those due to tumor of the brain, may simulate typical periodical headaches of other origin. My own experience is in favor of this view. I have also notes of two or three cases confirmatory of a statement made by W. C. Wood [6] that these headaches may cease suddenly on the outbreak of more serious symptoms.

One case was that of a woman, who, when I saw her, had been suffering for days with intense and uncontrollable pain, which suddenly gave place to hemiplegia and aphasia from which she never recovered. In another case of the kind I should certainly try the effect of bleeding, as Dr. Wood recommends.

In another case, the patient, a young man of otherwise excellent health, had long suffered from pain, which he had considered as neuralgic, in a circumscribed spot in the left occipital region, and this too disappeared with the onset of a persistent vertigo. This patient died soon afterward, but not under my care.

It is probable that the headache in these cases is not always of the same origin, and that its sudden disappearance is due to altered vascular conditions, for I have seen the same happen in a case of thrombosis of the left vertebral artery. The patient was an elderly man, and the pain, which had been present for a week or more in the occipital region, ceased on the occurrence of signs of softening of the medulla [7] from which the patient shortly afterwards died.

INHERITED SYPHILIS.

I have endeavored to trace the history of the children of these syphilitic parents for signs of actual syphilis or of impaired vigor, but the data were insufficient for publication. I have, however, notes of one case of what I believe to be inherited syphilis of late development which is worthy of being reported.

It is that of a boy of fifteen, very kindly sent to me by Dr. J. C. Blake, for electrical treatment, on account of deafness, not due to middle ear disease, of only a few months' duration and of rapid increase, and so severe that when I saw him it was difficult to make him understand the voice.

The possibility of inherited syphilis had, I believe, occurred to us both, but was without proof.

Shortly after I saw him, a keratitis developed rapidly in both eyes, without apparent cause. He was sent to Dr. O. F. Wadsworth, and his opinion strengthened the syphilitic theory. The boy was put at once on increasing doses of iodide of potash, which was well borne, and later on small doses of the biniodide of mercury, and he has improved steadily and greatly from that time to the present; an interval of more than a year.

PROGNOSIS.

The curability of syphilitic disease of the nervous system is, I think, usually over-rated. The brilliant results of the first attempts at treatment should not lead one to deceive himself as to the strong tendency to relapse, the necessity of eternal vigilance and of a

[6] Loc. cit.
[7] Confirmed by the autopsy.

persistence in the treatment perhaps throughout the patient's life.[8]

TREATMENT.

I must confess myself decidedly of the party of those who believe that large doses of iodide of potash and mercury are often necessary in the treatment of the late nervous lesions of syphilis, though I must confess that the reasons for my opinion are rather inferential than positive.

Many patients do perfectly well on moderate doses, it is true, and for them possibly enough is as good as a feast. On the other hand, I am convinced that from time to time I have seen patients improve on doses of a drachm or 100 grains of iodide of potash three or four time daily, who had not done as well on smaller doses, and I have seen patients at the hospital that I did not care to trust with large doses, fail to do as well as I thought they ought.

Again, what I think should count of practical importance, I have never seen large doses, properly watched, do any irreparable harm.

In the case of one patient with syphilitic myelitis whom I was seeing daily, and whose prospects of leading a life of invalidism would have made him willing to incur almost any risk, I gave by gradual increase, up to nearly ʒij. of iodide daily, and then for the first time signs of poisoning on the part of the nervous system appeared, which were at first rather alarming, but quickly subsided. I believe that even larger doses than this have occasionally been used. The same patient has been taking now for several years ʒss. or more, daily, for at least half the time, with constant improvent in his nutrition.

RELATIONS OF SYPHILIS TO LOCOMOTOR ATAXIA.

I have notes of fifty cases of locomotor ataxia in which mention is made of the presence or absence of a chancre *judged mainly* by the patient's admission or denial. Of these there was a history [9] of primary infection in twenty-nine cases (male 27, female 2), and secondary symptoms were present, without history of primary infection, in two, and somewhat doubtful symptoms in a third (a female); making in all about sixty per cent. of syphilitic or possibly syphilitic cases. In ten others gonorrhœa was admitted, but syphilis denied, a history which means, at the least, possible exposure to the causes of syphilis.

These figures corroborate the statements of other observers, that there is a close circumstantial bond between syphilis and locomotor ataxia. The nature of this bond no one has been able to discover, but if it proves true, as a few observations seem to indicate, that anti-syphilitic treatment is occasionally effective in bringing about a cure, it will show that the connection is at least occasionally a direct one.

My own experience in this direction, like that of the majority of observers, has hitherto been negative.

It may well be that some of the cases, though presenting the usual symptoms of locomotor ataxia, really belong in another category. Thus, three of the thirty-two patients had shown symptoms of cerebral syphilis, in addition to the spinal symptoms, and with one of these, a woman, the anti-syphilitic treatment seems to have affected the spinal symptoms favorably.

If any advantage is to be obtained by such treatment it probably needs to be thorough and prolonged, instead of incomplete and temporary, as the temptation is to make it.

Strangely enough, the other chronic scleroses of the spinal column do not seem to be, with anything like the same frequency, of syphilitic origin, and yet it does appear to act as one of their occasional causes.

Thus I have seen several cases of multiple sclerosis for which previous syphilis was a possible and the only discoverable cause.

A case of this kind has recently been carefully described by Schuster, in which anti-syphilitic treatment is said to have affected a cure.

Quite as common a cause as syphilis of some forms of spinal sclerosis is chronic lead-poisoning, as I have shown before this Society and elsewhere.

Post-mortem examinations have not as yet shown anything characteristic in the lesions of syphilitic locomotor ataxia.

In a case of my own where the presence of the early and secondary symptoms of syphilis were unquestionable, the spinal lesions did not differ from those ordinarily seen. The arteries in the substance of the cord were greatly thickened, but this may be found in simple tabes.

In conclusion, I beg to acknowledge the courtesy of my colleague, Dr. G. L. Walton, in permitting the use of his notes of cases treated at the Massachusetts General Hospital.

FATAL POISONING BY CHLORIDE OF ZINC APPLIED TO AN EPITHELIOMA OF THE LIP: WITH REMARKS.[1]

BY ARTHUR H. NICHOLS, M.D.

On the 7th of January, 1886, I received an urgent summons to visit J. R., residing in Dorchester. In the month of June previous, this man, whose family I had for many years attended, presented himself for advice regarding an incipient epithelioma situated on the margin of the lower lip. The imperfect development of the growth seemed to render immediate surgical interference unnecessary, and delay was accordingly recommended. This advice did not prove satisfactory, and during the summer he put himself under the care of an irregular practitioner from Worcester, whose treatment proved wholly ineffective. Subsequently, attracted by a mendacious advertisement, and the reputed cure of a neighbor by another irregular physician from Lynn, the latter was called upon, and readily agreed to effect a prompt cure. To quote from this advertisement, now before me, the writer states that he has "a practice peculiarly his own, having never divulged it to any one." He furthermore alleges that "the medicine used is a vegetable liquid, and is a complete and effectual antidote for cancers and tumors, af-

[8] On the reading of this paper attention was directed by a member of the society to the importance of ascertaining, in cases of syphilis of the nervous system, whether the primary lesions had received thorough treatment or not. This inquiry has not been systematically made, but it may be assumed that in the case of the hospital patients there had almost never been a thorough primary treatment, and my knowledge of the history of the private patients enables me to assert the same with regard to the majority of them. The reader's attention is at the same time especially invited to the remark of Dr. J. C. White, (Boston Medical and Surgical Journal of Oct. 7, 1886), that he has seen serious nervous symptoms arise in patients who had been steadily under his own observation and under thorough treatment for upwards of two years following infection.

[9] It is of course probable that the original diagnosis was incorrect in some cases, but these would probably be counterbalanced and more by the cases of mistaken denial of infection.

[1] Read before the Boston Society for Medical Observation, June 7, 1886.

fecting only cancerous tissue. . . . In killing an ordinary cancer, he requires only from two to six hours, and the pain is so slight, a child can easily bear it."

Upon reaching the patient, about 7, P. M., I found him unconscious, respiration slow and stertorous; pulse 110, small and weak; pupils dilated and irresponsive to light; face flushed, and whole body bathed in cold perspiration.

It transpired that at 1, P. M., of that day, a son and partner of this physician, a young man of extremely limited professional attainments, had come to the house and persuaded the family that he was in all respects competent to conduct the treatment, having received the required instructions and remedial agents from his father. The patient's apprehensions were quieted with the assurance, reiterated in the presence of the family, that the medicines employed were purely vegetable, and that the pain produced would be insignificant. The lip was then treated with two different applications, the latter being left bound upon the diseased surface when the young man took his departure at the expiration of about an hour and a half. Three pills (containing, as was afterwards ascertained, one grain each of svapnia) were left, with directions to take them all in case of severe pain.

From the very outset, the patient protested that the pain induced by these applications was unendurable, and it gradually increased in intensity, extending beneath the chin to the neck. These complaints were treated with ridicule by the attendant, who assured him that the drugs used might be even *swallowed* with impunity — a statement which may be important, as tending to throw light upon the real cause of the accident which followed. At about 3, P. M., he complained of the region of the stomach, and soon after rushed to a rear door, seemingly to get fresh air. A violent chill now set in, associated with a numbness of the lower extremities, and a sensation of dizziness. He was then assisted to a lounge, and the plaster removed from his lip. Convulsive movements of the upper extremities now supervened, and he soon sank into a state of stupor, followed by coma, from which he could never after be aroused.

Medical aid was now sent for, and Drs. C. E. Stedman and W. C. B. Fifield were soon procured. The prominent symptoms observed by these gentlemen upon their arrival were stupor, retarded breathing, and unevenly dilated pupils; and under the influence of heat and stimulants, there was for a time marked improvement in both pulse and respiration, while the pupils regained their normal calibre. When it was ascertained, however, that the opiate pills had not been taken, it was deemed expedient to telegraph to Lynn, with the view of eliciting precise information as to the nature of the poison which was producing so profound an effect upon the nervous system. This message was responded to by father and son, who appeared upon the scene about 8.30, P. M. The latter, upon his arrival, was rendered rather incoherent by the ghastly appearance of the patient, now rapidly sinking, and he was shortly after led from the room in a demoralized state. The father succeeded in maintaining a better equilibrium, and volunteered the following details as to the treatment adopted: The procedure consisted, as alleged by him, in the application of a strong potash lotion, made from lees formed of the ash of sweet-fern and bayberry tops, designed to remove the cuticle. The tumor proper was then attacked by a caustic paste bound upon its surface, prepared according to the formula:

℞ Zinci chloridi	ʒ j.
Amyli	ʒ ij.
Podophyllin	℈ ss.

By 9, P. M., the pulse was 140, very weak and intermittent, and death ultimately ensued at 9.30, P. M., from asphyxia, the pulse and heart-beat being perceptible fully eight minutes after voluntary respiration had ceased.

The patient whose life was thus abruptly terminated was a robust, rugged farmer, aged fifty-two, of steady, temperate habits; he had been in perfect physical condition up to the very day of his decease, with the exception of an occasional slight attack of neuralgic rheumatism. These periodic illnesses had excited some suspicions on his part as to the existence of kidney or heart disease, on which account I had from time to time examined him, and retain the record of several analyses of urine. The result of these examinations had led to the conclusion that he was free from all organic disease — an opinion confirmed by a careful *post-mortem* made by Dr. H. Warren White.

"*Autopsy.* Sixteen hours after death. Well-developed man, past middle life; cadaveric rigidity well marked. Dark, circumscribed discoloration of lower lip on left side; surface nearest the teeth ulcerated; not much infiltration. Skin, fatty layer scant. Musculature firm developed; good color. Brain, veins prominent; no signs of hæmorrhage, tumor, softening, inflammation, nor anything abnormal. Heart, left side moderately hypertrophied, blood fluid, valves healthy. Lungs, some hypostatic congestion, but remarkably free from adhesions or any morbid process. Liver, fair size, slightly congested. Gall-bladder partly filled, normal. Spleen somewhat softened and congested. Stomach moderately distended with gas lining membrane perfectly normal. Œsophagus normal, save a congested ring about one inch above the cardiac orifice, possessing no significance. Intestines distended, vermiform appendix of above average length, and containing a small concretion; color everywhere normal. Pancreas normal in size and appearance. Kidneys healthy; normal relation between cortex and pyramids; cyst of the size of a filbert at apex of right kidney. Bladder full of urine; opened and found healthy. Intestines free from constrictions and other lesions."

If we accept the statement of the attendant and family concerning the treatment and subsequent behavior of this man, it is highly probable that death was due to the absorption by the *primæ viæ* of a portion of the strong mineral caustic (chloride of zinc), which trickled into the mouth from the plaster applied to the margin of the lip, the ingested poison proving fatal by the profound shock exerted upon the nervous system.

Nor is this theory of the specific action of the irritant poison invalidated by the absence of marked erosion or irritation of the mucous membrane of either mouth, œsophagus or stomach, which effect would not be produced if the poison entered the mouth slowly, receiving thus a large admixture of saliva. It seems, indeed, unaccountable that any appreciable quantity of so metallic-tasting a substance could have entered the mouth during consciousness without being promptly rejected; or, at least, without exciting some complaint. Attention may, however, have been diverted from the internal, local effect, or disagreeable taste, by the false assurance that the drug could be safely

swallowed: or, possibly, by the more painful action of the caustic upon the healthy tissue surrounding the diseased growth.

It was my privilege, as a medical student in Paris in 1864, to witness the experiments conducted by Maisonneuve in the treatment of carcinoma, scirrhus, and other recurrent and fibrous tumors by the so-called *cautérisation en flèches*, introduced by him in 1858. This treatment consisted in thrusting caustic arrows into deep incisions made with the bistoury in the periphery of the mass to be removed. In the course of twelve or fourteen days the diseased structure was destroyed and detached, leaving behind a clean, healthy surface, which became speedily cicatrized. These arrows were used not only in the case of morbid growths upon the surface of the body, but also in tumors of the neck of the uterus, the tongue, soft palate, tonsils, anus and rectum.

It was claimed by this surgeon, that while the styptic action of the caustic prevented all danger of hæmorrhage, its destructive action was confined to the diseased tissue in its immediate contact. The statistical results of this method, extending over a series of years, seemed to demonstrate its effectiveness; and that it lessened the danger of erysipelas and pyæmia at that time rife, owing to the insanitary condition of the Paris hospitals. I saw enough to convince me, however, that the pain produced by this process was immeasurably worse than that inflicted by the knife, and, of course, of much longer duration. The formula then employed by Maisonneuve was: — chloride of zinc, one part; wheaten flour, three parts; water, sufficient to make a paste. From this paste, rolled into a thin, round sheet, arrows of any dimensions could be cut. It will be observed, that the chloride of zinc used in the present case was identical in strength with that recommended by Maisonneuve.

As regards the medicinal use of this agent, it has been employed, largely diluted (m. x–xx to ʒiv), as an urethral and vaginal injection; also as a collyrium in gonorrhœal and diphtheritic ophthalmia. It was at one time exhibited internally, especially in France, in small doses (5 to 10 centigrams a day), on account of its alleged antispasmodic action in certain nervous derangements such as chorea, epilepsy, hysteria and neuralgia; but was discarded on account of its uncertain therapeutic effect, and because of the deleterious results observed (colic, nausea, vomiting, convulsive movements, etc.)

As an external application, it was first used by Pappengath, a St. Petersburg physician, in the obliteration of fistulous ulcers of a scrofulous nature. Subsequently it was recommended by Hancke for the destruction of maternal nævi, syphilitic ulcers of carcinomatous appearance, etc. By various German writers (Moore, Reichel, Heine), it has been praised as a caustic injection. Lutin advises an aqueous solution of five to even ten per cent. in order to establish sloughing. In Hebra's wards in Vienna, in 1867, *lupus* was occasionally treated by means of a modified Canquoin paste, the active ingredients of which were chloride of zinc and chloride of antimony: and I find in my note-book a formula, recommended for cancerous tumors of the breast, composed of chloride of zinc combined with chloride of bromine and chloride of antimony.

I have found but a single clinical fact to support the statement of Orfila as to the possibility of the absorption of this substance by a denuded surface. In *Pyl's Memoirs* a case is recorded (referred to by Naunyn, also by Woodman and Tidy), where the outward application of chloride of zinc to an eruption is said to have caused death in five hours with vomiting, purging, and convulsions. I have sought in vain for the work here alluded to, and find it difficult to accept a statement so utterly at variance with universal experience.

In the light of existing knowledge we are not, therefore, in condition to condemn the remedial agents resorted to in the present instance; for the caustic was employed in justifiable strength, and substantially as has been recommended by surgeons of repute. The malpractice consisted in the failure to employ ordinary and reasonable care in the management of the case, and in the deceptive statements as to the innocuousness of the drugs. The doctor was unfortunately ignorant of the toxical effect of his remedy when taken internally; and the patient, lulled into false security, thus failed to take the necessary precautions as to allowing the poison to enter the mouth or stomach.

Poisoning by chloride of zinc, though formerly unknown, has been comparatively frequent in England, since the introduction of Sir William Burnett's disinfecting fluid, which contains about two hundred grains of the salt to the ounce. More recently, cases of poisoning have occurred, both in this country and abroad, from the use of canned vegetables and meats containing a small quantity of chloride of zinc dropped into the cans from the soldering material applied to secure the lid. If the dose of the poison administered be large, death ensues ordinarily within a few hours from its irritant or corrosive action: characterized by a burning sensation, colic, vomiting, diarrhœa, cramps and convulsions. If, on the other hand, the poison be taken in smaller doses, or less concentrated, so as to be absorbed; or, if the patient does not at once succumb to the primary corrosive action, then the secondary, specific effect if the drug upon the nervous system is manifested; indicated by venous congestion, stupor, dilated pupils, convulsive movements, paralysis, and coma, a group of symptoms resembling those of uræmic poisoning. This compound toxical effect is more frequently witnessed in certain poisons derived from the vegetable kingdom, such as *nux vomica*, hemlock, monkshood, veratrine, and poisonous mushrooms.

I am inclined to believe that the behavior of the pupils under the influence of this poison may not be constant nor characteristic, although dilatation is the condition commonly noticed; for it is not assumed that this change in the iris is essentially the result of a local action upon the muscular fibres or blood-vessels of this organ such as is produced, for instance, by belladonna: it is rather to be included in the category of the familiar phenomena liable to follow any sudden and severe disturbance of the central nervous system, the rationale of which phenomena is by no means clearly understood. Hence, it would not be strange, if, as in some instances of traumatic shock, the contracted pupils, or so-called pupils of erethism, were at times observed.[2]

The first reported instance of fatal poisoning by chloride of zinc is that related by Dr. Letheby, former lecturer on chemistry in the Medical School of the London Hospital, and to show that this dual action of

[2] Vide Grœningen, Ueber den Shock, p. 86.

the drug was fully recognized and accurately described by this distinguished writer, I may reproduce in synopsis his article.[3]

The patient, a girl aged fifteen months, "when first seen was in a semicomatose state, the vital powers being much prostrated, the countenance pale and anxious, the breathing thoracic and rapid, the pulse quick and fluttering, and the general surface of the body cold and bedewed with perspiration. The swelling of the lips and the thick, transparent mucus adhering to them, led to further examination, and the lining membrane of the mouth was found to have the appearance of having undergone the action of a corrosive substance. The child had been well in the morning, and only an hour and a half before had been seized with most violent sickness after swallowing some of Burnett's fluid. . . . No relief could be given; vomiting of a frothy liquid took place at intervals, but the coma became deeper, the respiration slower, the pulse more feeble, and ten hours after the symptoms had commenced the child died."

Experiments made by Dr. Letheby with this liquid in order to determine its leading chemical and physiological characters, showed: firstly, That chloride of zinc is distinguished from the other salts of this metal by its quick and firm coagulating action on liquid albumen and on the delicate tissues of the body. Secondly, That a solution of chloride of zinc exerts a twofold action on the living animal economy. Its first effect is that of an irritant and caustic; the liquid coagulates the tissues and gives pain in the part to which it is applied, and causes almost instantaneous vomiting. It appears moreover, from the investigations of Orfila, that the salts of zinc act upon the stomach not only when they are introduced into this organ, but also when they are injected into the blood-vessels of the body. The second effects are of a constitutional character, and it would appear that the poison exerts a distinct and specific action on the motor and organic system of nerves; for soon after the poison gains access to the circulation, the breathing and pulse become accelerated; paralysis of the voluntary muscles commences; the surface of the body grows cold, the pupil is dilated; the circulation and respiration become more and more affected, coma supervenes, and death takes place without a struggle.

Dr. Letheby proved, moreover, by experiments, that the poison is absorbed from the alimentary canal and carried into the general circulation. He has detected the metal in the blood removed from the heart, in the tissues of the body, and in the urine excreted during life. The appearances presented by the blood indicate that the poison exerts some peculiar action on this fluid, which is found black and uncoagulated; and the cavities of the heart are distended as if the organ had lost the power of contracting on its contents.

To Dr. John G. Johnson, of Brooklyn, belongs the credit of first directing public attention to the danger arising from the use of fruit and vegetables preserved in cans, the lids of which have been soldered with chloride of zinc instead of resin; and he has, furthermore, demonstrated that it is impossible for the most expert workman to employ this objectionable solder without dropping some portion of it into the can. In the *Sanitarian* for June, 1884, he gives a most instructive account of the poisoning of six persons in one family from this source. These cases having been made the subject of subsequent litigation have attracted extensive notice, and are of especial value in that they illustrate the compound action of the drug in a single subject.

In a more recent contribution to this same subject,[4] Dr. Johnson propounds the novel theory, that a still more subtle form of poisoning resulting from the continued use of these canned goods may consist in a chronic disturbance of the renal functions (nephritis) accompanied by albuminuria, and ultimately giving rise to a form of Bright's disease. This theory, though not yet demonstrated by clinical observations or physiological experiments is certainly in accord with the more recent hypothesis framed to explain some of the phenomena of lead poisoning (*amaurosis, retinitis, nephritis, etc.*) in which the retention of the constituents of the urine and the concomitant accumulation of the poison may give rise to symptoms resembling in their ultimate development those of uræmic poisoning.

As regards the legal responsibility in this case, where death was presumptively owing to the treatment received and caused by it, there cannot be much doubt as to the criminal liability of the delinquent practitioner for the injury thus caused. Indeed, two successful actions have recently been sustained in this State, in which the negligence or culpability was certainly no greater than in the present instance; that of Pierce, who caused the death of a woman by the application of kerosene, and that of the woman-practitioner Cummings, whose negligence and recklessness in the use of the fluid extract of the St. Ignatius bean led to a fatal result. The principle of law laid down by the court in these cases is, that if a person publicly practising as a physician, on being called to a sick person prescribes with foolhardy presumption a course of treatment which causes death, proper medical assistance being at the time procurable, he may be found guilty of manslaughter, although he acted with the patient's consent, and with no ill intent.[5]

In the case of Pierce, it was held by the Supreme Court that the defendant's knowledge or ignorance of the fatal tendency of the prescription did not have an important bearing upon his guilt or innocence; inasmuch as every physician is supposed to possess a familiarity with the remedies which he employs; and if any one assumes to prescribe without the exercise of ordinary prudence, and, not being in the possession of common experience, thereby seriously and unreasonably endangers life, he does so at his peril.

To quote the apt illustration of Judge Holmes: "When the jury are asked whether a stick of a certain size was a deadly weapon, they are not asked further whether the defendant knew that it was so. It is enough that he used it and saw it such as it was. . . . Indeed, if the defendant had known the fatal tendency of the prescription, he would have been perilously near the line of murder."

This is now the law in Massachusetts, and it is in harmony with the English law, as well as with a multitude of decisions in other States; and the rule, while working no harm to the competent physician exercising his calling with reasonable diligence and care, must conduce to the safety and welfare of the community, in so far as it assigns some limitations to

[3] *Vide* Lancet, June 11, 1859, p. 23.

[4] New York Medical Journal, April 24, 1886.

[5] Mass. Reports, 138, 165.

the license of reckless pretenders. It is uncertain, whether it was the recognition of this liability, or a dread of exposure which led the principal in this fatal experiment to settle with the family of the victim without allowing the case to come to trial.

There exists in every community a class of sufferers, who, in consequence of some previous fright or personal idiosyncrasy, entertain a morbid dread of any operation involving hæmorrhage, and who prefer therefore to submit to pain, rather than to the surgeon's knife. Such persons are surely not to be blamed if they elect treatment by caustic rather than by surgical operation, when it has been asserted by competent surgeons who are supported by official statistics, that not only does the caustic promise a result equally favorable to that obtained by excision, but, moreover, that the morbid growths are more thoroughly reached and their recurrence thereby rendered less probable.

It is, therefore, to be regretted, that so many patients are compelled, in order to obtain relief by this method of their choice, to resort to non-reputable practitioners, because the legitimate treatment by caustics formerly so highly commended has by reason of fashion, or from other insufficient causes, been substantially discarded by the regular profession.

TENDERNESS OF THE SPINE IN HEALTH AND DISEASE, AND THE THERAPEUTIC EFFECTS OF BLISTERING OVER THE FOURTH AND FIFTH DORSAL VERTEBRÆ.

BY MORTON PRINCE, M.D.
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In an article published not long since in the *Lancet*,[1] Dr. Alexander Harkins, of Belfast, calls attention to a phenomenon which he claims, as a result of very extended observations, is normally to be observed in every individual; namely, tenderness on percussion over the fourth or fifth, or both, dorsal vertebræ. Dr. Harkins at first thought that this was peculiar to women suffering from various neuroses, but after examining the spines of a large number of people of both sexes, he concluded that tenderness of one or both of these vertebræ was the normal condition of every individual of every age and class. Of one hundred and thirty-one female children and girls, from six to sixteen years of age, every one complained of tenderness in this region when the spines were percussed. Of thirty-five women, of various ages, the phenomenon was present in the greater number, while "a number resented the examination, were sulky or gave indifferent answers." Of thirty-one boys, eleven to nineteen years of age, and of three hundred men, tenderness was observed in every case. The pain was said to be peculiar; "some compared it to an electric shock, diffused over the chest and arms; others liken it to the tingling sensation caused by a knock upon the ulnar nerve, at bend of elbow, and all declare it disagreeable."

Dr. Harkins further claims that he has constantly been enabled to cure a large number of neuroses by the simple method of placing a blister over the tender spot. The vomiting of pregnancy seems especially to have been amenable to this treatment. "I have not once failed," he writes, "for many years by a single vesication over these vertebræ, to put an end at once to the sickness of pregnancy, for the whole remaining period of gestation, no matter at what stage I was consulted. The neuralgic toothache, and the pruritus pudendi of the puerperal condition yield as readily to one application." Dr. Harkins's paper contains the notes of a number of cases in which a cure was speedily affected. They include, besides the neurosis of pregnancy, chorea, facial paralysis, facial spasm, neuralgia, ozœma, and dysmenorrhœa.

The great care with which Dr. Harkins's observations have been made and recorded entitle them to something more than passing attention, and it is evident at once, that if they should be confirmed, they must be of great practical value. Tenderness over some part of the spinal column is generally regarded as symptomatic of a number of nervous disorders. Every one, probably, has carefully percussed a multitude of spines and gravely recorded the tender spots in his note-book. But if it be true that we all are the possessors of a tender spot, such tenderness, when associated with disease, would lose much of its pathological significance, at least when located over the fourth or fifth dorsal vertebræ.

Even in so-called spinal irritation, local tenderness, which has played such a prominent part, must lose much of its diagnostic value, and even some of its power as a claimant for sympathy for the sufferer.

Furthermore, if such remarkable therapeutic effects can be obtained by such a simple procedure as blistering in the above described fashion, we have a powerful remedy at our disposal for many intractable diseases.

Accordingly the writer set about percussing the spines of a number of healthy and unhealthy individuals, and blistering such unhappy ones as promised to be good subjects for experiments. Though the results obtained have not completely confirmed those obtained by Dr. Harkins, they appear to be sufficiently striking to be worth recording, and to be not devoid of practical value. They seem to the writer to aid in giving the proper value to spinal tenderness as a symptom, as well as to a therapeutic procedure which in suitable cases must prove of unquestionable utility.

First, the spines of 57 healthy men were percussed. In 53 of these no tenderness whatever could be detected. Two, only, complained of tenderness over the fourth and fifth dorsal vertibræ, while one stated that the third dorsal, and one the tenth and twelfth dorsal were tender.

To avoid error more force was used when striking over the vertebræ in question than over the remainder, though all were struck with considerable force. As a percussor, the knuckles of the forefinger were used, the fist being firmly clinched; sometimes a percussion hammer was substituted, often both were tried. The subjects were stripped to the waist and put in a favorable position for the experiment.

The subjects of experiment were applicants for position on the Boston Fire Department, and it occurred to me at the outset that the results obtained might be affected by the men denying all tenderness, for fear of appearing unsound. To offset this, as a source of fallacy, I impressed upon their minds the object of the examination, and even insisted that every healthy man ought to have a tender spot in his spine. But it was all to no purpose. Even after making a

[1] 1883. v. ii., pp. 56 and 995.

liberal allowance for this possible source of error, the results, to be presently described, obtained on men sick with various diseases, show that there would still remain a large variation from Dr. Harkins's results.

Why his and mine should be so at variance, especially those obtained with the Irish constabulary, I am unable to understand, unless indeed, the strength of the official Irish backbone has been somewhat weakened of late by apparitions of coming home-rule. I have had no opportunity to test the spines of any large number of *healthy* women. It is very likely that tenderness is sometimes present, but that it occurs with anything like the frequency that has been asserted, may be strongly questioned, inasmuch as none whatever could be detected in a large proportion of women debilitated by various diseases.

Coming now to the condition of the spinal column in disease, I have notes of 75 cases, which were examined without selection and in their order of appearance at the out-patient nervous department and wards of the City Hospital. They embraced quite a variety of diseases.

Of the total 75 patients, 37 were males, affected with the following diseases: epilepsy, neuralgia tabes dorsalis, multiple sclerosis, neurasthenia, chorea, hysteria, hemiplegia, myelitis, neuritis, traumatic paralysis, articular rheumatism, heart disease, typhoid, pneumonia, nephritis, pleurisy, debility, gastritis, phthisis, cystitis.

In 20 of the 37, tenderness over either the fourth or fifth, or both dorsal vertebræ could be detected; in the remaining 17, these vertebræ exhibited nothing noticeable whatever.

The women included about the same class of cases, and were 38 in number; in 24 of them tenderness was complained of in the fourth and fifth dorsal vertebræ, a proportion slightly in excess of that obtained with males. The absence of tenderness in the region in question in fourteen cases shows that, at least in the writer's experience, this is not a constant phenomenon, even in disease. The nature of the disease does not seem to have any influence. It was found in organic as well as functional, in non-nervous as well as nervous diseases; nor is it always present in any one disease. It would seem that anything which tends to debilitate the system may give rise to the phenomenon, especially phthisis.

On the other hand, the character of the pain was not described as like that given by Dr. Harkins's subjects, but only as a local, ordinary pain. In only one case (of pregnancy not included in the above) it was referred to the stomach, and described as sickening or nauseating.

It should be said that the pain spoken of in many of the cases was slight, in some so slight that it would not ordinarily be recorded; but as there is no way of measuring the degree of pain, all such cases have been counted among those with tender spines. But it is not always in the region of the fourth and fifth dorsal vertebræ that tenderness, when present, is located. Of the 37 men examined, general tenderness of the spine was noted in 4 cases, and tenderness other than over the fourth and fifth dorsal in 11 cases (with or without coincident tenderness in the latter locality). Of these 11, it was located over the first dorsal in 1 case, second dorsal 2 cases, sixth dorsal 1 case, and eleventh dorsal to first or second lumbar in 7 cases; so that next to the fourth and fifth dorsal, the next most common site is the dorso-lumbar region. In only 11 out of the whole 37 cases could no tender spot at all be detected.

No note was made as to the existence or non-existence of tenderness in the women other than over the fourth and fifth dorsal.

Coming now to the therapeutic effect obtained by blistering over the fourth and fifth dorsal vertebræ in neuroses, the results cannot be said to be as successful as claimed for the treatment by Dr. Harkins. In a few instances they were striking, and showed the method to be of some practical value. It was applied in quite a variety of functional and organic nervous affections, such as chorea, neurasthenia, neuralgia, paralyses, vomiting of pregnancy, torticollis, spinal irritation, rheumatism, tobacco-neurosis, etc.

The most strikingly successful case was that of a woman of about thirty to thirty-five years of age, who had been under treatment in the surgeon's room at the Dispensary for about four or five weeks, without any improvement. She was finally brought to me. At this time she complained of great pain and tenderness in the back of neck, the pain shooting upwards over the back and sides of the head. The muscles of the neck were stiff, almost rigid, the head being fixed in one position. There was great tenderness over the cervical vertebræ, and the slightest jar on the top of the head or movement of head caused intense pain; indeed it had been thought there might be caries of the vertebræ, especially in view of the physical condition of the woman, which was that of anæmia and debility. Her expression was indicative of prolonged suffering. There was also enlargement of the submaxillary glands. Finding, also, tenderness over the fourth and fifth dorsal vertebræ, I directed that a blister be placed over that region.

The next day the woman returned, presenting an entirely different picture. The pain and tenderness were gone, the motion of the head was natural, and the look of suffering had disappeared from the face. Of course, the pleasure exhibited by the patient at being at last relieved from pain was what might have been expected. She afterwards had some trouble with the enlarged glands, but the above symptoms never returned. I saw her about a year afterwards, when she stated she had had no return of the symptoms. Two other cases of the same character but less severity were equally successful. One was that of a man whose surprise and delight at his sudden cure were truly comical. I have tried the treatment in one case only of vomiting of pregnancy, when it was eminently successful (vide *Boston Medical and Surgical Journal*, 1886).

In a case of paralysis and atrophy of the deltoids, biceps, brachialis anticus and coraco-brachialis of both sides, accompanied with intense pains about the shoulders, arms, and neck, I found the spine exceedingly tender in the fourth and fifth dorsal region. The case was probably one of progressive muscular atrophy. For the relief of pain, I blistered with the actual cautery in the above region. The effect was to give great relief from pain, but none on the course of the disease was noticed. The cautery, from time to time, had to be repeated. Some improvement followed the treatment in a case of spasmodic torticollis, and in one of "nervous excitability" from excessive use of tobacco. The neuralgic pains of spinal irritation were also relieved by blistering.

On the other hand, in all organic diseases, such as tabes and neuritis, it has naturally failed to produce any curative effect. In chorea, my experience has been opposed to that of Dr. Harkins, as I have failed to obtain any improvement, unless it be, as is possible, that some of the cases which did not return for a second observation were benefited, and for this reason did not return. This was the case with a number of patients with various ailments, and as a single visit is not the usual failing of patients attending nervous clinics, it is not a very extreme assumption to suppose some of them were cured. In the majority of cases, certainly, the treatment was without success. Whether or not a blister over the fourth and fifth dorsal vertebræ has any specific influence, or more than over any other portion of the spine, or elsewhere, I refrain from discussing in the absence of sufficient data.

Finally, from what has been said, the following conclusions may be drawn:

Tenderness over some portion of the spinal column is not peculiar to any particular class of diseases, but may be present whenever the system is debilitated from any disease. It may be met with in health; it is more frequent over the fourth and fifth dorsal vertebræ than elsewhere. Second, decided and beneficial effects may often be obtained by blistering over the fourth and fifth dorsal vertebræ in various neuroses.

Clinical Memorandum.

A CASE OF PUERPERAL ECLAMPSIA.[1]

BY SARAH ELLEN PALMER, M.D., OF PORTLAND, ME.

Mrs. W. B., primipara, thirty-nine years of age, married sixteen months since. Six years before her marriage she had left the school in which she taught because of a serious illness, beginning with sudden unconsciousness, while leading the school exercises. Of this illness I have no medical account. With this exception she had never been ill, save occasional attacks of facial neuralgia.

During the first eight months of pregnancy, the health had been perfectly good, save an annoying eczematous eruption on the legs, which yielded to simple remedies and partial rest; no swelling of the feet followed. In November, when eight months pregnant, she suffered from an attack of tonsillitis, succeeded, before she was fairly well, by a mild form of diphtheria. From this she made a perfect recovery.

The patient was dismissed December 15th, the house thoroughly disinfected, and the drainage investigated. At this time the urine was examined, as it had been thrice before; then, as now, the kidneys were found in a perfectly normal condition. At the time of confinement the feet were slightly swollen and œdematous, but the ordinary boots could be worn.

Friday, January 8th, I was summoned at 5, A.M. The cervix was shortened, but not obliterated. At 3.15, P.M., she was delivered of a boy weighing seven pounds. The placenta followed at once. The labor was normal, though slow, and the patient's strength good throughout. The uterus contracted well. During the second stage the pains, though effectual were separated by a considerable interval; ether was given to dull the sensibility, but not to unconsciousness, and with no effect on the efficiency of the pains. One drachm of Squibb's fluid extract of ergot was administered on the expulsion of the head from the cervix, and again just before delivery. During the progress of the labor, the bowels were evacuated, and the urine was drawn with a catheter in the second stage. After labor the patient was in good condition, expressed herself as feeling well, and took some nourishment. Thirty minutes from delivery, she shivered and said she felt "nervous, not cold." Before I could reach the bed she was in a clonic convulsion, almost immediately tonic in character. The uterus, held by the hand of my assistant and well contracted, now relaxed; the pulse at the left wrist was imperceptible, the right was not examined; blood issued from the mouth. Stimulant injections of brandy and ether were given hypodermatically; the pulse weak and rapid, appeared at the wrist, and the uterus contracted in response to a hypodermatic of ergot. Convulsive motions continued about one minute and a half, followed by unconsciousness for thirty minutes. The face, hands and feet were almost immediately perceptibly swollen. Dr. I. T. Dana, of this city, came in consultation, and the following treatment was given by common consent. Because of an idiosyncrasy, morphia was sparingly given; one-third of a grain was injected with the hypodermatic syringe, and this was repeated twice during the next two days. Pilocarpin, one-eighth grain, was also given hypodermatically. The urine, drawn with the catheter, became almost solid on boiling, and from a specimen sent a few hours later to an accomplished specialist, the following report was received: Appearance of the liquid yellow, turbid, with a considerable sediment; reaction neutral; specific gravity 1.024; loaded with albumen. The microscope showed urates of ammonium, triple and simple phosphates; epithelia from the vagina, bladder, convoluted tubules of the kidney and pelvis and cervix uteri, with hyaline and granular casts. A diagnosis of acute catarrhal and croupous nephritis, with a grave prognosis, was added by the microscopist.

Upon recovering consciousness after the first convulsion, the patient answered Dr. Dana's greeting, and was immediately seized with a second attack, which was shortened by the administration of ether by inhalation. At this time the pulse was distinct at both wrists. During the following hour, two impending convulsions were aborted by the ether. During the day two drops of croton oil in one teaspoonful of castor oil placed on the tongue were followed by a free and apparently involuntary evacuation from the bowels.

Immediately after the first convulsion, forty grains of bromide of sodium were given by rectum. Six hours later, thirty grains of bromide with fifteen of chloral were injected.

During the day the patient recognized those about her and responded to simple questions; in the afternoon she seemed to hold a most vivacious and pleasing conversation with some invisible person. Towards night she fell into a semi-conscious state. Dr. Gerrish, who was now added to the consultation, was apparently recognized as he entered the room and greeted Mrs. B. Later the face assumed a dusky hue, and although she opened her mouth in answer to a request to protrude the tongue, she made no further

[1] Reported to the Practitioner's Club, June, 1886.

effort. From this time the mental condition steadily failed until at twelve o'clock she was unconscious. The teeth were set firmly, the eyes were closed, the face was dusky and swollen, the respiration was Cheyne-stokes, the pulse was rapid, and the temperature was 101.5° F. During the afternoon, digitalis had been administered, and a sinapasm applied over the upper cervical region. At 12.30. A.M., the teeth were forced open and whiskey and beef tea poured down the throat. Sunday at 2, A.M., thirty drops of dilute phosphoric acid was injected with the hypodermatic syringe, and repeated every thirty minutes until four doses had been given.

From this time she very slowly improved, and at 5, A.M., was sleeping quietly, with respirations more regular, and the dusky hue of the face slightly lessened. During the day dilute phosphoric acid was given by the mouth in fifteen-drop doses every three hours, the amount given being regulated by its apparent effect on the head. We judged of her sensations simply by her involuntary movements. During the morning she was in a semi-comatose condition from which she gradually aroused, but with evident aphasia which did not disappear until Tuesday morning, when she could, for the first time in sixty hours, frame intelligible sentences, seventy-six hours from the first convulsion. She talked very slowly at first, and was fatigued by the effort. She had no recollection of anything which occurred after the appearance of Dr. Dana, thirty minutes from the first attack. During this interval, beef-tea, whiskey and milk were freely administered; dilute phosphoric acid was given with the caution mentioned above, and tincture of digitalis.

The urine was passed with the involuntary dejections, and therefore the amount could not be exactly estimated, but it was drawn every six hours, and the quantity was nearly normal. Microscopical and chemical examination at this time showed the specific gravity to be 1,016, with the albumen slightly lessened and the casts fewer; but a large quantity of renal epithelium was still present. An occasional slight convulsive tendency was shown by fixed eyes or muscular movements. The lochia were scanty, but the quantity was increased by the administration of fluid extract of ergot.

On Tuesday night, she told me that she heard voices still, but that she realized they were only in imagination. For days she was troubled by wild fancies when sleeping. Tuesday night she also complained of hemiopia, which disappeared in a few days.

In health, the patient's pulse is full, strong, and sixty beats to the minute, the temperature rarely rising a fraction of a degree above normal. Until February 1st, the temperature did not fall below 99° F., and the pulse was weak, ninety beats to the minute.

January 25th, an examination of the urine gave normal specific gravity, albumen in small quantity, and careful searching revealed but one cast, though renal epithelium with pus was still largely present.

February 1st, she was allowed to sit up for the first time. On the 17th, she was able to go up and down stairs. From this time until April 14th, when she passed from my hands, she improved constantly, an examination of the urine at this date giving no albumen or casts, and very few renal epithelia with pus.

This case is reported because of the absolute freedom from premonitory symptoms, there being at no time albuminuria, œdema, headache, or nervous disturbance, and because of the profound impression on the nerve centres after but two convulsions.

Therapeutical Memorandum.

CONCERNING SOME HYPNOTICS.

BY S. G. WEBBER, M.D.,
Superintendent Adams' Nervine Asylum.

SEVERAL drugs have been lately given to the profession with the claim that they are valuable hypnotics. I have had an opportunity of testing these in the cases of many patients in the Adams' Nervine Asylum.

Paraldehyde has been some years in use. It has advantages over chloral. The immediate subsequent effects are less unpleasant. It very rarely causes headache on the next day; sometimes patients have a sensation of fullness or pressure in the head for a few hours after waking. I gave it in one case where the patient had been taking chloral in large doses, not measuring the dose, and had been injuriously affected by the drug. The paraldehyde gave, in this instance, better and more prolonged rest; the patient partially recovered his mental powers and some measure of strength. The paraldehyde was continued several weeks in nightly doses of forty minims. In this patient there was probably disseminated sclerosis, and it did not seem possible to do without some agent to produce sleep, at least so long as he was at home.

The chief objection to paraldehyde is its disagreeable odor and taste, and also the odor it imparts to the breath. I do not remember to have met any unpleasant symptoms arising from its use; but had never seen a case in which it has been used habitually for a long time. The dose is from forty five to eighty or ninety minims; sixty minims is the average dose. Occasionally a dose of eighty minims has failed to give the sleep which I have desired to obtain.

Urethan came into notice later than paraldehyde; it is much more pleasant to administer, having scarcely any taste or odor.

When I first gave it the dose was too small, but by increasing it to thirty grains good results were generally obtained. Sometimes much larger doses are necessary. It is quite soluable; fifteen grains will dissolve in a drachm of water.

The after effects are generally unimportant. It has seemed once or twice to give rise to nausea the day after; but often the patient says the sleep has been very natural and refreshing. It is not so sure to produce sleep as paraldehyde.

Hydrobromate of hyoscin has the advantage of being almost tasteless; and the dose is small. I began with a dose of one hundred and twentieth of a grain, as recommended by the articles I had read; but soon found this too small, and increased to a sixtieth of a grain, using the following formula, giving twenty minims:

℞. Hydrobromate hyoscin . . . gr. i.
Alcohol . . . . . ʒ iss.
Aquæ q. s. ut fl. . . . . ʒ xx.
M.

In a few instances I have given twenty-five minims of this mixture.

There is so little taste to this that it can be given

in some simple drink, as gruel or beef tea, without the knowledge of the patient.

In one patient it produced discomfort in the head the next day, so that after two trials it was given up and urethran given instead. In other cases the sixtieth of a grain given for a week or more has produced no bad effects. In a few cases it has failed to produce sleep, and the sleep secured in other cases has not been of so long duration as that usually produced by paraldehyde, but subsequently in these same cases the latter drug has not proved more efficacious. On the whole, my experience with this drug is that it will act favorably with a large number of patients, that it is acceptable on account of its lack of taste and odor and because of its small dose; the sleep obtained is very refreshing and natural; it is, however, rather more likely to leave unpleasant effects, and seems to lose its power by repetition sooner than either urethan or paraldehyde.

Hypnone has a strong odor of bitter almonds. One patient spoke of it as having "all the odors of Araby the blest." I have given it in capsules in dose of five to eight drops (.07 to .13) or even more, the former dose is rather small for good results. It will produce very natural sleep, and the patient awakes refreshed. It is of much less value than the drugs already considered, and fails more frequently than the others in producing sleep. It may be conveniently substituted for the others when they have been taken some time consecutively.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

CHARLES P. STRONG, M.D., SECRETARY.

Meeting June 7, 1886. Dr. Derby in the chair. Dr. E. J. Forster reported,

A CASE OF PUERPERAL DIPHTHERIA.

Dr. F. W. Johnson inquired if it was the reader's custom to order vaginal douches after delivery as routine treatment.

Dr. Forster replied that this had been his custom, but he was now making a trial of the "antiseptic pad" with a view to omitting the douche.

Dr. A. H. Nichols reported

A CASE OF POISONING BY CHLORIDE OF ZINC; WITH REMARKS.[1]

Dr. B. F. Davenport said that in reports of cases of poisoning by chloride of zinc the effects of its corrosive action were always prominent, and this was due to the ready solubility of the salt, which permitted its use in a very concentrated form. In cases of poisoning by canned fruits the majority of authorities attribute the results to lead rather than to zinc poisoning; the fermentations causing solution of the lead. This idea has usually been conclusively proven where the cases had been analyzed and the cases followed to the end.

Dr. Derby inquired if zinc chloride was commonly used in sealing cans.

Dr. Nichols said it was, because it could be used by unskilled workmen, while sealing by resin required a certain amount of practice and skill.

Dr. Greene inquired if the reader disapproved of the use of zinc chloride in any case of epithelioma of the lip, provided the use was restricted to persons of proper surgical skill.

Dr. Nichols replied that the employment of the knife was better in cancer of the lip, but that there was no reason why the salt should not be used in cancer of the breast and other parts of the body, beyond the fact that it was out of fashion and had fallen into the hands of irregular practitioners.

Dr. Forster inquired as to the effect of the amount of podophyllin which the patient might have received in this dose.

Dr. Nichols replied that he had felt sure none of the effects were due to this. There was no action produced on the intestinal tract.

Dr. Derby said that this possibility of the podophyllin playing some part in producing the final results had also occurred to him, and inquired if Dr. Nichols felt certain he could entirely eliminate this factor.

Dr. Nichols said that Dr. Johnson, who had investigated very carefully cases of poisoning arising from canned goods, had written him that the most skilled workmen had failed, in his presence, to seal cans without permitting some of the zinc chloride to enter the can, as he had proved by analyzing its contents.

Dr. H. W. Williams spoke of the advantages to be gained by combining in use cocaine and caustics, either directly or by employing hypodermic injections of the former.

Dr. Derby inquired as to the occurrence of zinc chloride poisoning among the cases of cancer treated by this agent in Paris, to which the reader had alluded in his paper.

Dr. Nichols said that these cases were very closely watched, and that he could not say the deaths were attributable to the caustics, as the fatal cases were all desperate ones, and the bad results were quite as likely from the disease. Those cases that did not do well were large cancers of the breast.

THE AMERICAN GYNÆCOLOGICAL SOCIETY.[1]

THE TREATMENT OF PROCIDENTIA UTERI BY GALVANO-CAUTERY,

by Dr. John Byrne, of Brooklyn.

In regard to the relation of laceration of the perineum to prolapse of the uterus, the speaker held that laceration of the perineum by interfering with the process of involution, may be a remote cause, but that laceration and prolapse can be associated in any other sense, cannot be admitted.

Operations on the perineum can only influence the prolapse by offering an obstacle to vulvar protrusion. Only when a portion of, or the entire cervix is removed, can we look for permanent and satisfactory results after operation on the perineum.

In February, 1872, Mrs. H., the mother of four children, presented herself with the entire womb and vesico-vaginal wall protruding. She was thirty-five years of age. The cervix was ulcerated from the

[1] See page 343 of the Journal.

[1] Concluded from page 332.

friction. She was treated by applications of glycerole of tanin and irrigation for two months. The ulceration was healed, but no impression was made on the prolapse or on the size of the uterus, which measured four and one-half inches. The cervix was then removed with the galvano-cautery loop. The patient recovered without a symptom. Five weeks later, there was no bulging of the vesico-vaginal septum, and the uterus could just be reached with the finger. No reasonable amount of force by means of a vulsellm forceps could draw it down. The patient was discharged cured and has continued well.

The whole number of cases treated with the galvano-cautery has been nine, but in three only has the cervix been removed. In six of the cases linear cauterizations were required.

Case II was a patient with procidentia who had been treated with pessaries for a long time. The cervix appeared to be healthy. A double tenaculum was introduced into the cervical canal and the whole mass pushed into the pelvic cavity and lifted to show the line of vaginal insertion. A groove sufficiently deep to admit the loop was then cut around the cervix close to the vaginal vault. The loop was then adjusted and the cervix cut through to the depth of one-fourth of an inch. The wire was then removed and tampons of glycerole of tanin inserted. Two weeks after operation, the uterus resisted all reasonable efforts to depress it. Two years after operation no perceptible change was observed. The health had never been better and menstruation was regular.

In Case III the parts were returned and the line of vaginal insertion marked in spots with the cautery knife. The entire mass was then drawn down and a deep fissure three eighths of an inch in depth made around the circumference of the cervix. Then three incisions were made in the vagina, one central and the others diverging, and the whole mass was then returned. The recovery was complete. In none of the cases has there been any peritonitis of any account.

The speaker highly recommends farther trial of the galvano-cautery in these cases.

ELECTRICITY IN GYNÆCOLOGICAL PRACTICE,

by DR. GEORGE J. ENGLEMANN, of St. Louis.

After reference to the confusion which had surrounded this subject he referred to the following points which should govern the use of electricity as a therapeutic agent. The formation of strict indications for the use of the galvanic and faradaic currents: a differentiation between the varying forms and modifications of the galvanic and faradaic current. Differentiation between the active and indifferent pole, the localization and concentration of the current, the precision of the dose, the use of stronger currents continued for a short time. He has used the galvanic or faradaic current in the reduction of the size of neoplasms, fibrous polypi, cystic growths and urethral caruncles, also in chronic pelvic inflammation and in chronic ovarian inflammation, in stenosis of the os, for the relief of the engorgement accompanying sub-involution, in prolapse when due to relaxation of the tissues. It is an aid in the correction of various forms of displacement, in metrorrhagia when due to inflammation and relaxation, in certain forms of amenorrhœa, and for the relief of many annoying reflex symptoms. In obstetrics it is useful in uterine inertia during or after labor, in cases of weak and irregular labor pains, post-partum hæmorrhage, in delayed involution, in paralysis of the urethra or bladder after labor, and in the interruption of extra-uterine pregnancy.

The only contra indication to the use of electricity is the presence of severe acute inflammation. It may be used in sub-acute inflammation. In the more acute pelvic inflammations care is required in its use.

A number of cases were then referred to, showing the beneficial effect of electricity in diminishing the size of fibroid tumors and in other conditions.

Adjourned.

THURSDAY.— MORNING SESSION.

ELECTROLYSIS IN GYNÆCOLOGICAL SURGERY,

by DR. W. H. BAKER, of Boston, Mass.

The speaker referred more particularly to the use of electrolysis in cases of fibroid tumor; he laid down the following rules for the performance of the operation: it should not be employed within a week before or after menstruation. An anæsthetic should be administered; it is better to use electolytic needles for both the positive and negative poles: the operator should be absolutely sure of the cleanliness of his needles; the needle should be deeply buried in the tumor in order that the current shall be insulated from the parts outside of the growth; the insertion of the needle should be made at the most prominent part of the growth, whether that is in the vagina or in the abdominal wall; the needles should not be too nearly approximated; if both needles are properly placed the position of the two poles makes no difference; the circuit being completed, the number of cells should be gradually increased from four to twenty or thirty; (a more exact means of determining the strength of the current would be the galvanometer, but this had not given him accurate results); the length of time during which the application is continued should be from ten to twenty minutes and should be determined by the character of the pulse. When the pulse becomes slower and weaker than normal, the number of cells should be diminished or the current discontinued. The current should be diminished gradually and the wires should be disconnected at the battery before the needles are removed. The applications should not be made at the surgeon's office. After the application the patient is to be put to bed, where she is to remain for one week.

With such precautions, the speaker had never seen shock after the operation. A single treatment is often all that is necessary. He had never found it necessary to make more than three applications, and the latter number in only one case. There should be an interval of at least from one to three months between each application.

The use of electrolysis is also of service in the treatment of inflammatory effusions. The following case was related: Mrs. X., aged twenty-eight, married, the mother of one child three years old. The present trouble had existed since the birth of the child. A diagnosis of chronic perimetritis was made. The effusion was most marked on the left side behind the uterus. For six weeks ordinary treatment was given without much benefit. For the next two months, the treatment consisted of hot water injections, applications of iodine and the use of the galvanic current, with the positive pole in the posterior cul-de-sac and the negative pole over the epigastrium, using as many

cells as possible. This was used every other day. This caused a decrease of the sensitiveness but did not diminish the size of the effusion. At the end of this time, the positive electrolytic needle was inserted into the mass and the negative sponge was pressed above the pubes. A current from eighteen cells was applied for ten minutes. At the end of a month scarcely a trace of the effusion could be felt. Before resorting to electrolytic puncture the application of the current as first employed in this case, should be tried, as it does not require an anæsthetic and avoids the slight risk which accompanies even small wounds.

The author presented the following conclusions:

(1) Electrolysis is a useful agent in the treatment of certain cases of fibroid tumors of the uterine walls and of chronic circumscribed periuterine effusion.

(2) When applied to fibroid tumors of the uterus, electric puncture is a most reasonable and efficient method.

(3) In the treatment of fibroid tumors by this agency, it is unnecessary to apply it often.

(4) Cases of perimetric effusion to be treated by this method should be selected with care in reference to the absence of all acute symptoms.

DISCUSSION.

Dr. James R. Chadwick, of Boston. Ten years ago, I tried electrolysis in one case of fibroid tumor, introducing the needle through the abdominal wall. This caused a smart attack of peritonitis. During the following year, there was no decrease in the size of the tumor. A few weeks later I was called in consultation to see a case which had an enormous pelvic abscess as the result of electrolysis. This deterred me from continuing the treatment further. I shall, however, give it another trial.

Dr. George J. Englemann, of St. Louis. The dangers mentioned by Dr. Chadwick, are those which are liable to follow puncture through the abdominal wall. By puncturing through the vagina and if possible through the tissue of the uterus we avoid the dangers of inflammation which accompany abdominal puncture. I believe that the same results can be accomplished without anæsthesia and with less danger by one electrode in the tissue and concentrating the total effect upon that electrode, by using a large electrode in connection with the other pole.

It has appeared to me that those tumors in which the muscular element predominates are less liable to be treated successfully by electricity.

Dr. James B. Hunter, of New York. My experience with this method of treatment has been limited, but I cannot say that I have seen one case of fibroid tumor permanently relieved by electrolysis. In one case in which it was freely used by Dr. Freeman and myself, I subsequently operated and removed the tumor by hysterectomy, the patient making a good recovery. I could find no evidence of the effect of the current on the tissue of the fibroid.

Dr. Matthew D. Mann, of Buffalo. I have employed this agent in one case, plunging one needle into the tumor from behind through Douglas's cul-de-sac, with a sponge electrode over the tumor on the outside. The current was kept up fifteen minutes. Six applications were employed. The size of the tumor much diminished, and the tenderness and pain were lessened. The patient is now able to attend to her duties.

PERSISTENT PAIN AFTER ABDOMINAL SECTION,

by Dr. James B. Hunter, of New York.

Abdominal section is, as a rule, performed for pain, and if this still persists, one of the objects of the operation is not accomplished. Pain before an operation may be due to various causes. It may be located in the ovaries, when it will be increased by menstruation. Disease of the tubes is a cause of pain in a large number of cases. The pain of peritonitis is of great importance. Acute peritonitis may be limited to the region of the ovaries and tubes, and the pain caused by it may be periodical in character. The presence of adhesions interfering with the mobility of the intestines and other organs is a frequent cause of pain. A severe form of pain may also be caused by displacements of the uterus.

Abdominal section is performed for the relief of pain, and the organ at fault is successfully removed and the patient recovers, but the pain continues. If there is no marked relief at the expiration of twelve to eighteen months, if the patient has been favorably situated, the operation may be pronounced a failure, so far as the patient is concerned. Such pain may be due to former peritonitis, to peritonitis following the operation, or to some defect in the abdominal wall.

Many of the cases which have been cured of diseases endangering life still suffer pain. For a number of years I have been where I could follow up these cases. Peritonitis following the operation is a cause of pain in a certain number of instances. A slight amount of peritonitis often occurs after abdominal section, and it may leave some slight adhesions, interfering with the mobility of the viscera. Inflammation in the region of the stump often causes its attachment to the abdominal wall, and thus caused pain. Sometimes the uterus is fixed by inflammation, and the distension of the bladder causes pain. Adhesions of the intestine may also cause pain. Pain may result from defective union of the abdominal incision, allowing a ventral hernia. Pain in the cicatrix may occur, as in other situations. Abscess may also develop in the wound a long time after healing has been completed.

In the way of prophylaxis, the utmost precaution should be taken to prevent the development of peritonitis. Especial care should be taken to do no violence to the intestines. Antiseptic precautions should be adopted. The stump should be tied with aseptic silk. The early and judicious use of drainage and irrigation will go far toward preventing inflammation. The cold coil, with antipyrine, should be resorted to if there are any indications of peritonitis.

In the treatment of the pain, blisters, vaginal injections, and the use of iodine may be resorted to. The internal use of opium is usually demanded. Such treatment can, however, scarcely be expected to cure the pain. Rest in the horizontal position is, perhaps, better than any medicine. If all palliative measures have been tried, and at the end of twelve or eighteen months there is no improvement, a second operation may be warranted. The dangers of operative procedure, and the uncertainty of the operation causing any improvement must be stated to the patient. If the patient prefers the operation, an exploratory incision should be made. In one case the speaker had found a loop of intestine attached to the uterus, which he loosened, with a good result. In another case, considerable relief was afforded. As a rule, however, it is

not possible to separate adhesions, and, if separated, they are prone to unite, and fresh peritonitis is apt to follow. Often the exploratory incision is all that can be made.

CONCLUSIONS.

(1) All cases of abdominal section done for the relief of pain should be carefully followed up for at least two years, and not counted as cured simply because the operation has not been fatal.

(2) Peritonitis following operation is to be dreaded as much for its remote consequences as for its immediate danger.

(3) Extreme caution is demanded when the operation is undertaken where there exist the physical signs of chronic peritonitis.

(4) Secondary operations, as a rule, are of no value, although occasionally they may afford relief.

(5) Where the operation is done for the relief of pain, a guarded prognosis should be given. There are certain chances that a perfect cure will not result, even if the operation itself is entirely successful.

DISCUSSION.

Dr. A. J. C. Skene, of Brooklyn. Among the causes of pain after laparotomy, I would place the ligature. In tying the pedicle after removal of the ovaries, some traction must be made upon the broad ligament, and the nerves must be drawn upon. That form of pain may disappear. Another cause of pain is the application of the ligature just tight enough to arrest hæmorrhage, without destroying the nerves. I think that we have more pain after the use of the ligature than after the use of the cautery clamp. The cautery, as a means of treating the pedicle, has never been thoroughly tried in this country.

In regard to what constitutes success after abdominal section, I would say that many of the cases which I have reported as failures have subsequently turned out to be most successful.

Dr. R. Stansbury Sutton, of Pittsburg. Dr. Hunter has, in his paper, alluded to a case on which I operated two and one-half years previously. In this case the ovary was surrounded by a coil of intestine, which had undergone fatty degeneration to such an extent, that its own weight was sufficient to cause it to break. I removed the ovary with the diseased bowel, and brought the edges of the intestine together. The woman recovered, but she was not cured of her pain. It is not often that we have the opportunity during life to determine the results of a resection of the intestine. I should like Dr. Hunter to tell us what he found.

Dr. W. Gil Wylie, of New York. The author appears to have completely ignored the general condition of the patient. What will cause pain in one person will not in another. With reference to peritonitis, I would say that I regard it as a condition behind which there is some disease. In chronic peritonitis, there is often some cause which keeps renewing the inflammation. In many of the cases that suffer after operation, the pain is due to imperfect operation. Sometimes a small portion of diseased tissue is left. I have taken the precaution to destroy the diseased tissue that may be left beyond the ligature, either by carbolic acid, or preferably by Paquelin's cautery. This has lessened the mild attacks of peritonitis. Sometimes the inflammation is centred around a ligature, leading to abscess and the formation of a sinus. In some of these cases the trouble can be cured by dilating the sinus and fishing out the ligature. In many cases the peritonitis is due to the bursting of a small cyst. I have intentionally burst these cysts on the table, put the patient to bed, and watched the case.

Again, in cases where there is chronic inflammation of the lining membrane of the uterus, this is not always cured by removal of the tubes and ovaries. This may cause pain not only in the uterus, but reflexly in other parts of the body. These pains can often be cured by dilating the uterus and applying carbolic acid.

Dr. Robert Battey, of Georgia. I have had some little experience with the difficulties alluded to by Dr. Hunter. We are all familiar with the neurotic women. As a result of a carious tooth, an intense neuralgia may be set up, which may continue for years, and not be relieved by the removal of the diseased tooth. This is probably due to an alteration in the nerve-tissue itself. The explanation that these pains persisting after abdominal section were due to inflammation and adhesions has been carefully considered by myself, but I have wholly failed to find a satisfactory explanation in this quarter. The neurotic cases which have given me the most trouble have been almost uniformly those where I was unable to find any such deposit in the pelvis.

The speaker has said that at the end of twelve or eighteen months, we should give up these cases as failures: I should qualify that statement by more than doubling the limit. Some of the cases which were most unsatisfactory at the end of a year have achieved the most gratifying cure by the lapse of time.

Among the causes which produce this neurotic condition, I am inclined to rank in the first place, an acquired neurotic habit from long suffering. In looking for causes, I have been much struck by one point, that alluded to by Dr. Skene, that is, the use of the ligature and especially a rather loosely tied ligature. Dr. Skene suggests the use of the cautery and clamp. I formerly used a method which has not been alluded to, and that is the separation of the ovary from its attachment by the ecraseur. In these cases, I did not have any of these troublesome neuroses and there was no hæmorrhage. I have seriously been considering a return to this method of treatment.

With regard to treatment by a second opening of the abdomen, I would call attention to the fact that by a simple opening of the abdomen, purely for diagnostic purposes, unaccompanied by any great disturbance of the parts, the condition of the patient is often greatly improved, especially as regards pain. In a case of gonorrhœal inflammation, I opened the abdomen after the failure of all other methods of treatment, finding everything glued down by adhesions. I abstained carefully from all manipulation after satisfying myself of the entire impracticability of any operation. The patient, without any deception on my part, gained the impression that the ovaries and tubes had been removed. She has now been under observation two months and the relief has continued. Before the operation she used full doses of morphia, but since then she has used no anodyne whatever. She has not menstruated since the operation.

I think that after removal of the ovaries and tubes, the uterine trouble will get well, but the cure may be

hastened by applications to the interior of the uterus, of a solution of iodine in carbolic acid.

Dr. H. P. C. Wilson, of Baltimore. I am satisfied that while cases do occur where the pain after laparotomy continues as a result of local adhesions, yet the majority of cases belong to the class of cases described by Dr. Battey, where the condition is due more to the neurotic element than to the operation. Most of these are long-standing cases, where the mental condition has become so morbid that the patient is almost insane on the subject of her ovaries and tubes. Even if these organs are removed, the neurotic condition may remain for a long time. Where the woman has to work and has not time to think of herself, these pains more rapidly disappear than where she is pampered with every luxury. Nothing is so good for the relief of these pains than exercise by walking. There is one remedy of which I use more than any other drug in the materia medica, that is assafœtida. I never order less than sixty pills. This tends to keep the mind occupied, and these conditions are more mental than physical. A friend tells me that in one such case, he obtained great improvement by ordering the patient to eat a reed-bird every two hours, day and night.

Dr. Matthew D. Mann, of Buffalo. I suppose that Dr. Skene, in speaking of the ligature, refers to silk. I cannot see that the objection would hold against cat-gut. I have used this in a number of cases and have had no trouble with it. As regards the time after operation at which recovery may occur, I have seen it take place long afterwards.

Dr. James B. Hunter, of New York. Dr. Sutton has asked me what I found in the case on which he had operated. The patient was suffering much pain, which was increased on defecation. I opened the abdomen a little to the right of the original incision and found the attached portion of the gut. A white, oblique line showed where the two portions of the gut had united, and this was fastened to the abdominal wall. It showed a very satisfactory result. I removed the other ovary and tube and found them perfectly healthy. The condition was neither improved nor made worse by the operation.

The neurotic condition has been referred to, but I think this is secondary. As regards chronic neuritis. I agree with Dr. Battey that usually after removal of the ovaries nothing more is required.

I am willing to admit that my limit was too short, and should be extended to two or three years. I think that it is not well to expect any improvement after removal of the ovaries and tubes for at least twelve months. I think that it takes that long for the system to become accustomed to the changed condition.

THE BLUE DISCOLORATION OF THE VAGINAL ENTRANCE AS A DIAGNOSTIC SIGN OF PREGNANCY,

by Dr. James R. Chadwick, of Boston.

The speaker had made it a point in all cases of early pregnancy to make a note of how much discoloration he could detect; he had tables of four hundred and forty cases examined. He had divided the discolorations into four groups: First, doubtful, where it was so faint that he could not be certain of its presence; Second, suggestive, where it was more marked; Third, characteristic, where the discoloration, though faint, is confined to the anterior wall of the vagina and more particularly to the urethra, just below the meatus and on either side of the meatus. In every instance where this was present the woman was pregnant, with one exception; and Fourth, marked, where the congestion has become deep and exhibits the appearance constantly seen during pregnancy.

He did not claim that the characteristic discoloration is seen in every case, but if carefully looked for, it would be found quite pronounced in the majority of cases. The color varies from a violet to a dark, dusky, almost black color. He claimed that this sign was of especial value in cases of retroversion where the size of the uterus could not be determined and in extra-uterine pregnancy. He had obtained much assistance from it in a few cases of pregnancy accompanied by fibroid tumors, and also where there was a large accumulation of abdominal fat. When present, this sign is of decided value in the early months of pregnancy, but its absence should not be accepted as a positive proof against pregnancy. Cases were cited in which the discoloration had been observed in the seventh or eighth week of pregnancy.

DISCUSSION.

Dr. H. P. C. Wilson, of Baltimore. I consider this one of the most valuable means of diagnosticating pregnancy in the early stages. It is invaluable in cases where women wish to deceive you.

Dr. A. J. C. Skene, of Brooklyn. This has seemed to me to be a most reliable sign in the early months of pregnancy. I believe that it is an illustration of the physiological hyperæmia of the formative stage of development.

Dr. Joseph Taber Johnson, of Washington. Some years ago I referred to this point, and the discussion which followed seemed to indicate that the discoloration was a congestion produced by interference with the return of the venous circulation by the pressure of the enlarged uterus. It was held that the same discoloration could be produced by any other tumor which would have the same effect as the pregnant uterus.

Dr. William H. Parrish, of Philadelphia. In regard to the continuance of the discoloration after labor, I have noted that in primiparæ where involution of the vagina takes place completely, the discoloration disappears with corresponding rapidity. Where there is sub-involution, the blueness may continue for a longer time. In multiparous women where the blueness was marked, I have associated it with a condition of sub-involution of the vagina.

Dr. James R. Chadwick, of Boston. I have failed to notice any persistence in the discoloration described. The general discoloration may persist, but this characteristic blueness will, I think, be found to disappear. I have looked for this sign in forty or fifty cases of fibroid tumor, and have not found it in a single instance.

AFTERNOON SESSION.

Dr. R. Stansbury Sutton, of Pittsburgh, exhibited the specimens from three cases of

SUPRA-VAGINAL HYSTERECTOMY,

and made some general remarks on the operation.

DISCUSSION.

Dr. W. Gil Wylie, of New York. I think that in the large number of cases all that is necessary can be done by the vagina. In many cases of fibroid tumor, however, where hysterectomy has been performed for

hæmorrhage, I think that curetting the cavity of the uterus would have obviated the necessity for the operation. Fibroid tumors cause hæmorrhage by enlarging the uterine cavity. Where there is hæmorrhage, there are nearly always granulations. With the curette, not only may the hæmorrhage be brought to a normal standard, but I have seen the tumor diminish in size. It has appeared to me that fibroid tumors have a period of development and a period of decay. After a fibroid tumor has continued five or eight years its vitality is lessened, and it may diminish in size. This is not the case in all instances, and we meet with cases in which, if hysterectomy is not performed, the patient will die, as the result of the hæmorrhage.

The President, DR. THADDEUS REAMY, of Chicago. I think that if Dr. Wylie uses the curette in cases of fibroid tumor, he must, notwithstanding the adoption of all antiseptic precautions, have a certain number of cases of septicæmia. Curetting is much more likely to be followed by septicæmia when there is a fibroid tumor of the uterus than when the operation is done for ordinary fungous granulations. I believe that curetting under such circumstances would be almost as dangerous as the removal of the tumor.

DR. W. GIL WYLIE, of New York. So far as my own experience goes, I have had no trouble whatever. I invariably use antiseptics before the operation, and douche out the cavity afterwards.

THE HIGH MORTALITY OF THE RECENT CÆSAREAN OPERATIONS IN THE UNITED STATES, WITH THE REPORT OF A CASE,

by WILLIAM H. PARRISH, M.D., of Philadelphia.

S. M., married, was admitted to the Philadelphia Hospital, while in labor, September 20, 1885. She was the mother of two children, the last of which was born twelve years previously. Labor had begun on September 18th, the membranes soon rupturing. She was seen by two physicians, who had her sent to the hospital. The cord had prolapsed, and the pulsations had ceased before she was sent to the hospital. On admission, she was found much exhausted, with the cord protruding from the vagina. The resident physician not recognizing the gravity of the case, Dr. Parrish was not summoned until some hours after her admission. At this time the uterus was in a state of tonic spasm; the patient was etherized. The vaginal examination revealed merely a rigid condition of the cervix; the pelvic canal was roomy. The hand was introduced into the vagina, and two fingers into the uterus. The examination showed two hard, intramural fibroid tumors about the internal os. The author concluded that Cæsarean section should be performed without delay, and three of his colleagues were sent for in consultation. They all agreed that attempts at enucleation should not be made, but they did not agree as to the necessity of Cæsarean section. They were in favor of craniotomy. The skull was perforated, but it was found impossible to grasp and crush the head. Various instruments were tried without avail. The necessity for Cæsarean section was then conceded by all. The uterus had then been emptied of its waters for at least forty hours.

The vagina and lower part of the uterus were washed out with a solution of corrosive sublimate. The cervix was closed by tying around it a rubber drainage-tube. The abdomen was opened and the section of the uterus made. At once a very offensive gas escaped. A large child was removed. The placenta was not in the line of the incision. Antiseptic precautions were employed during the operation. Deep and superficial sutures were introduced into the uterus and the abdominal incision closed. A hypodermic injection of ergotin was at once administered. After the operation the tube around the neck was removed. The patient died twelve hours later from exhaustion and rapidly developing septicæmia.

At the autopsy, the lips of the uterine incision were found in contact. Three dense intra-mural fibroid tumors were found.

DR. PARRISH then referred to the great mortality of this operation in the United States, and presented the statistics of Dr. Robert P. Harris, of Philadelphia, of which the following is a synopsis:

Cæsarean Operations in the United States	144
Women saved, 37.5 per cent.	54
Children living when delivered,	64
First fifty operations, saved, 34 per cent.	
Second fifty operations, saved, 24 per cent.	

Operations performed in good season when the condition of the woman was favorable have in this country saved seventy-five per cent. of the women and eighty per cent. of the children.

Cæsarean section has been performed in thirteen cases where the obstruction was due to fibroid tumors and of this number four recovered and five children were living. The time in labor in the saved cases was nine and one-half hours, fourteen hours, three days, and four days.

The following rules were then given for the performance of the operation.

(1) Carefully determine the degree of obstruction and operate early in labor, as soon as the os is sufficiently dilated to permit drainage, and before the rupture of the membranes.

(2) Operate with full antiseptic precautions, but the spray over the abdomen is unnecessary.

(3) Control hæmorrhage by compression, either with a rubber tube or manually, preferably by the latter means.

(4) Introduce numerous deep and superficial sutures so as to approximate accurately the muscular walls of the uterus, but do not carry the sutures into the endometrium. Removal of a section of the muscular wall is unnecessary.

(5) Protect the peritoneum from the discharges and if it become soiled, it should be carefully cleansed.

(6) Ergotin should be administered at the beginning of the operation.

The PRESIDENT. In three thousand cases of labor I have never made a Cæsarean section nor any of its modifications. It is only now that the people are coming to recognize that craniotomy is not to be performed in any but the rarest instances, and that the sacrifice of life is unjustifiable. The explanation of the better results in other countries is not so much in the skill of the operators as in the condition of the cases when operated upon.

DR. WILLIAM H. PARRISH, of Philadelphia. I agree with the president that craniotomy should be an operation of exceeding rarity. The people are not yet ready in this country to accept Cæsarean section, but one of the great troubles is with the general medical profession who regard this as an operation almost necessarily fatal.

Adjourned.

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CLINICIAN *VERSUS* PATIENT.

THE very general and extended use which the present methods of medical instruction make of the clinical material afforded by hospitals and dispensaries has no doubt raised the question in the minds of the lay governors and supporters of these eleemosynary institutions as to whether their beneficiaries are likely to suffer any detriment through their employment in the education of students.

We believe that in this country at least the safeguards which not only public sentiment but professional care throws about the occupants of hospital wards are amply sufficient in the great majority of cases to prevent science from usurping anything that properly belongs to the rights of the individual; though doubtless cases have occurred in which the too zealous devotees of science have forgotten that their patients had a right above everything else to be put in the speediest way of getting well, which for some reason or other seems to be the leading desire in the minds of many sick people.

There has been, however, some loose talk about the subjection of hospital patients to experiments by those who do not sufficiently appreciate the fact that medicine is, at least in its present stage of development, an experimental science. Most of the experimentation to which the hospital patient is subjected, is common alike to him and to those who enjoy the services of the physician in his private practice. The earlier cases which are subjected to any new operation or medicinal treatment, are placed at a certain disadvantage, and this holds true whether the procedure be new to general medical knowledge or only to the experience of the individual practitioner.

The woman who is relieved of an ovarian tumor to-day, by an operator who is completing his series of a hundred successful cases is placed by fortune in a vastly more favored condition than she who first risked the operation under the knife of McDowell. But the immunity of the former was gained through the peril of the latter.

So there is always an experimentation which is proper in medical practice, and whose good fruits are gathered by all future patients within hospitals or without. Such experimentation is not confined to the hospital and if its results are more widely seen in such institutions, it is merely because of the better facilities there granted for collecting and collating observations.

One chapter of the Boylston Medical Prize Essay for the current year[1] is devoted to a consideration of the possible conflict between the interests of medical science and those of the individual patient and certain indefeasible rights of the latter. Among these are enumerated exemption from over-frequent physical examinations and from instrumentation for the mere purpose of giving instruction in diagnosis; the protection of female patients from exposure; the maintenance of every safeguard to parturient women against the transference of septic infection in connection with "touch courses," and the exclusion of labor cases from the wards of general hospitals; the subjection of the privilege of making an autopsy to the expressed consent in each case of the patient or his friends; and finally, the exemption of patients from experimentation merely *as such*.

On this last subject an English contemporary in discussing the essay in question, points out the difficulty of discriminating in some cases between what is legitimate and what is illegitimate in the matter of experimentation. The essay admits this difficulty and states that it is impossible to draw a definite line. There are certain classes, however, into which these cases seem to divide themselves. For instance, some investigations of interest to the student of anthropometry or of other statistics, to the physiologist or to the electrobiologist, can be made without causing pain or any other harm to the subjects. To ask permission to make them would be a waste of breath and to take it without asking, if theoretically a usurpation, practically violates no rights. Then there is the use of new remedies whose physiological action has been more or less investigated and with the result of indicating a probable or possible applicability to the cases in hand. Again, there is the debatable ground already referred to of tentative operations, which the physician would not care to have performed upon a member of his own family, but which, nevertheless, may give the best chance of present help to the patient, as well as of guidance for future cases.

Finally, there is the class of studies in which pain and nervous distress (whether real or imaginary) are caused through experiments that are utterly foreign to the needs of the patients who happen to be made their subjects. As an example of such usurpation the author of the essay referred to, has cited the wholesale experiments with nitrite of sodium, carried on by two eminent English therapeutists not long since, where the drug was administered to many different patients and repeatedly to the same person, and where effects alarming at least to the subject were frequently

[1] The Relation of Hospitals to Medical Education. Boston: Cupples, Upham & Co. 1886.

produced. Without expressing any opinion as to the appropriateness of this citation as a case illustrating the usurpation of the rights of patients, we may say in general that there seems to be a fairly definite distinction between an investigation which is carried on upon an entire ward of patients at the expense of their greater or less physical detriment, for the sake of determiping what are the vaso-motor or other phenomena produced by a given drug, and the trial for primarily therapeutic ends of a remedy which has already given evidence of some adaptation to the case in hand.

The hospital is a proper place for studying the therapeutic action of drugs, but their purely physiological and their toxic properties should be elucidated elsewhere. The subjects for such an experiment should offer themselves voluntarily and not be taken *nolens volens*.

That such discussions as the foregoing with regard to the right of the patient are not absolutely uncalled for, is shown by a case which has recently excited some attention among medical circles in Europe. In the Hospital of St. John, in Brussels, during an examination of candidates in surgery, one of the central examination jury removed an antiseptic dressing which had been personally applied with unusual care by the visiting surgeon in a case of operation upon a suppurating knee-joint. When the latter surgeon visited his patient the next day he found him very much worse, and soon after amputation of the leg became necessary as the only means of saving his life.

Very naturally the surgeon reported the circumstances to the "*Conseil des Hospices*," the Board of Management of the hospital, and very properly that body adopted a rule that hereafter one of the medical officers in charge of the ward should be present on every occasion when a clinical examination was to be made, to inform the examiners what patients might without injury to themselves be made use of for examination purposes. The jury of examination, however, felt themselves so much aggrieved at the proposition to establish a surveillance over their proceedings that they refused to conduct any more examinations at any of the hospitals under the control of the *Conseil des Hospices*, and have transferred all their examinations to an institution which is under a different supervision and where the jury, as it says, is "treated with the consideration that is due to it."

This unfortunate affair, which has led to a good deal of ill-feeling in the medical and even the non-professional circles of Brussels, all arose, it is likely, from a misapprehension by the examiner of the nature of the case which he assigned for the candidate's examination, but it emphasizes none the less the fact that the interests of clinical instruction may be pushed to a point where they come in conflict with the safety of the patient.

— The New York Board of Health has ordered a rigid inspection of all Chicago meat received.

CYSTS OF THE TESTICLE AND EPIDIDYMIS.

THE above subject has been studied by Hochenegg[1] from a large number of testicles (332) that have been removed during life or after death.

The cysts seem to divide themselves into two groups, the one composed of those standing in connection with the seminal ducts (spermatic cysts, spermatoceles) and the other, by far the more frequent, having no such relation.

Among the spermatoceles are distinguished those which are within the tunica vaginalis and those without. The causes which tend to their production are either congenital or acquired. Among the first is a failure on the part of the vasa efferentia to unite with the rete testis. Such an aberrant branch can be dilated by the pressure of the secretion during function. They are usually found situated either between the testicle and epididymis or in the head of the latter.

Some parts of the conducting apparatus would seem to be especially predisposed to dilatation from their anatomical structure and situation. The lumen of the seminal canals is narrowed in the rete, is enlarged in the vasa efferentia, and again diminished in the duct of the epididymis. The parts lying directly before these contractions would naturally be the most liable to be affected. Thus cysts would be expected from the canals of the testicle and epididymis. But in point of fact they occur only rarely in the former situation, so that another factor than the capability of resistence of the wall must come into play, and that is found in the condition of the surrounding connective tissue.

The sessile hydatids of Morgagni and the vas aberrans of Haller which often communicate with the epididymis and therefore normally contain spermatozoa are at times found to be dilated. But for the formation of a cyst there, it is necessary to have an impulse, which stops the stream of the secretion in one or the other of the efferent ducts. Two cases are recorded where violence was assigned, resulting in the tearing of the testicle from sudden bending and stretching. The ends of the lacerated tubules were closed and then gradual dilatation followed.

Epididymitis can lead to a distention of the canal but not to a cyst, as the tube is not obliterated entirely, In one case an adhesion had taken place between the testicle, epididymis and tunica parietalis in consequence of an abscess. This was evidently a cause for a sharp bend in the vasa efferentia at their point of passage through the head of the epididymis, and subsequent enlargement. Further causes are to be found in retention of secretion. About every fifth man is the possessor of a spermatocele.

The spermatocele that lies without the tunic vaginalis is the most frequent, and arises from the dilatation of the efferent canals which lie in the serous duplicature between testicle and epididymis and in the loose connective tissue. Generally this is filled by the direct pressure from the gland but at times by the indi-

[1] Med. Jahrb. d. k. k. Geselsch d. Aetzte in Wien, 1885, 1 Heft.

rect from its adjunct. In many cases a preëxisting rupture of one or more canals is not to be excluded. The semen which has extravasated is encapsulated, so that a sacculated cavity is formed communicating with a duct, by which it is gradually dilated.

The further distention occurs at the expense of the common tunic in the inguinal canal, just as large hydroceles involve the skin of the penis for their covering. The wall of the cyst is composed of an external connective tissue coat and an internal epithelial layer, which is composed in young cysts of stratified columnar cells, with here and there ciliated ones, while the older ones are covered with several layers of flattened cells.

The spermatocele within the tunica vaginalis is the rarer form. It is formed by a cyst which has developed from one of the sessile hydatids of Morgagni or from the ducts of the epididymis projecting into the cavum vaginale, and is covered by the visceral layer of the tunica vaginalis. The cause of these is to be sought in trauma, abnormal formation, or inflammation.

Large spermatoceles have the form of an inverted pear, small intra-vaginal and all extra-vaginal ones have no characteristic shape. The testicle is found at the lower end of the tumor, and is placed horizontally in the extra-vaginal forms.

To the cysts which do not belong to the seminal ducts belong those in the epididymis, the testicle and beneath the peritoneal layer of the tunica vaginalis. These are (1) subserous cysts (of unknown origin); (2) Cysts from dilated lymph vessels; (3) Cysts from subserous or subalbugineous extravasations.

COMBINED SCLEROSIS.

Grasset[1] has recently given an elaborate *résumé* of the subject of combined sclerosis, having collected the reports of thirty-three cases, including three cases from his own observation. He considers that the ætiology is the same as that of simple posterior spinal sclerosis, and that there is no definite heredity — unlike Friedreich's ataxia, which is also a combined sclerosis — except a general neuropathic taint. The symptoms in his own cases were a combination of the symptoms of spastic paralysis and tabes dorsalis, spasm and rigidity of the limbs, with contractions, being added to the classical symptoms of tabes, or else anæsthesia, lightning pains, and other tabetic symptoms being added to a spastic paralysis. A careful analysis of the thirty-three cases showed, at least, some symptoms of tabes in every case, while every case but one showed also some muscular symptoms. The condition of the patellar reflex was of interest. In fourteen cases no data were given, in twelve cases it was abolished, in seven it was somewhat exaggerated. In two cases it was exaggerated at first, but later it was abolished, having, as he thinks, the advance of the disease in the posterior columns.

He believes that the contractions are due to a lesion of the lateral columns. He thinks that the symptoms demand a lesion of both columns, which is confirmed by the autopsies. The lesion is a mixed one; in the posterior columns it is strictly systemic, while in the lateral columns it is diffuse. This is not exceptional, however, for in general paralysis we may get a diffuse lesion in the brain, and a systemic lesion in the cord. He, therefore, considers combined sclerosis as a clinically distinct affection. He quotes Zacher and Westphal as saying that, in a combined lesion, spastic symptoms do not develop in the limbs when the lesion of the posterior columns has reached the posterior root-zones in the corresponding section of the cord. Tabes dorsalis may be eliminated by the presence of spastic symptoms, spasmodic tabes by the presence of ataxic symptoms. All these forms of tabes, however, involve the whole cerebro-spinal system. If the patellar reflex is present in ataxia, it points to combined tabes. The combined form has ataxic symptoms (pains, anæsthesia, incoördination), combined with spastic symptoms (paralyses, contractions, and spasms), and cephalic and meso-cephalic (cough, dyspnœa, etc.) symptoms. Anatomically, there is a chronic myelitis in the posterior and lateral columns, neither wholly systemic nor wholly diffuse, but systemic in the posterior columns, and diffuse in the lateral — a mixed myelitis.

Strümpell[2] reports a case of apparently uncomplicated spastic paralysis, where the autopsy showed not only sclerosis of the lateral pyramidal tract, but also of the lateral cerebellar tract and the columns of Goll, with a certain amount of sclerosis of the outer circumference of the cord. All the symptoms could be referred to the disease of the lateral tract. As there was no paralysis, but a marked increase in the reflexes, the theory is advanced that the reflex inhibitory influences reach the motor-cells by a different path than the motor influences. He considers that this case, and others similar which he has reported, form a definite type of combined systemic disease of the cord. The pyramidal tract seems to be affected first and most, next the cerebellar tract, and lastly, the columns of Goll.

The sclerosis of the pyramidal tract begins exceptionally in the lower lumbar cord, is well marked in the lumbar enlargement and the dorsal cord, and ceases at the decussation of the pyramids. The sclerosis of the other systems of fibres is most marked above. The primary degeneration of the lateral tract, then, is ascending, and that of the cerebellar tract and the columns of Goll is descending — exactly the opposite of secondary degeneration. Vierordt[3] also finds the primary degeneration of the columns of Goll ascending. The degeneration of the cerebellar tract seemed to cause no symptoms. There was no loss of

[1] Grasset. Du tabes combiné (ataxo-spasmodique), ou sclérose postéro-laterale de la moelle. Contribution à l'etude clinique des myélities mixtes.) Archives de Neurologie, March, May, July, 1886.

[2] A. Strümpell. Ueber eine bestimmte Form der primären combinirten Systemerkrankung des Rückenmarks, u.s.w. Archiv. für Psychiatrie, XVII, 1, p. 217, 1886.

[3] O. Vierordt. Degeneration der Goll'schen Stränge bei einem Potator. Archiv. für Psychiatrie, XVII, 2, p. 365, 1886.

sensibility worth mentioning, but in one case some vesical disturbance might be attributed to the disease of the columns of Goll.

In all cases of apparent spastic paralysis, we must bear in mind this form of combined sclerosis, although transverse myelitis, multiple sclerosis, etc., may cause similar symptoms. He differs entirely from Grasset in assuming a mixed form as a combined sclerosis, where the symptoms of spastic paralysis and tabes dorsalis are combined; but he divides his combined systemic disease into three classes: Friedreich's ataxia, tabes dorsalis, and the spastic form, to which probably the cases once classed as "pure lateral sclerosis" belong.

Westphal [4] reports two cases of disease of the posterior columns, with retained patellar reflex. In both cases motor weakness and some muscular rigidity on passive motion were added to symptoms of tabes, and the patellar reflex was retained until a short time before death. The autopsies showed not only disease of the columns of Goll and Burdach, but also degeneration of the lateral cerebellar, and lateral pyramidal tracts, and of the anterior columns, especially the columns of Türck. On comparing these cases with others, Westphal finds that there is a region in the posterior root-zone external to a line drawn from the projecting angle of the posterior cornu, parallel with the posterior fissure.

If this region remains healthy in the junction of the dorsal and lumbar cords, the patellar reflex will persist, but as soon as it is invaded, the reflex disappears, and the more change there is present, the longer time before death did the reflex vanish. The disease of the posterior columns elsewhere accounts for the pain, anæsthesia, ataxia, etc., etc.; the disease of the lateral columns for the motor weakness and paralysis. Combined sclerosis does not develop from a previous myelitis, for the meninges showed only secondary changes. He denies utterly Strümpell's [5] claim that paraplegia developing in tabes dorsalis points to a systemic affection of the lateral columns, for, although they may be affected, it has not the remotest resemblance to a systemic disease. In fact, he considers the theory of the existence of special "systems" of fibres very uncertain. The clinical picture is that of tabes.

[4] C. Westphal. Ueber Fortdauer des Kniephänomens bei Degeneration der Hinterstränge. Zugleich ein Beitrag zur combinirten primären Erkrankung der Rückenmarkstrange. Archiv. für Psychiatrie, XVII, 2, p. 547, 1886.

[5] A. Strümpell. Krankheiten des Nervensystems.

MEDICAL NOTES.

— Dr. Jacob L. Williams, of No. 1 Mt. Vernon Street, Boston, writes us: "I have seen two cases of fingertips, severed by careless use of a 'hatchet,' unite, and become practically as good as ever."

— Considerable comment of an adverse character has been caused in the medical journals of this country by the reported exhibition at a recent meeting of the American Microscopical Society in Chatauqua, before a mixed audience of men, women, and children, of the "germs of life" consisting of living human spermatozoa.

— At a *conversazione* given last week at the Toronto School of Medicine, as we learn from a local journal, dancing took place in the dissecting room, which was gaily festooned with bunting, and the uniforms of military officers, together with the ladies' evening toilettes, banished any grim suggestions of the place.

— A man went into a beer-shop in Berlin, and poisoned himself there. The landlord despatched his daughter for a doctor, who did what he could for the man and sent him to the hospital. When he recovered he refused to pay the doctor, on the ground that he had not desired his services. The police, too, declined to settle the account, as also did the landlord, though it amounted only to the modest sum of a dollar. The Berlin Medical Defence Society then took the matter up and sued the landlord, who, in turn, was defended by the Publicans' Society, and the matter has now been in litigation for more than four years, with the result that the doctor, instead of getting his dollar, has had to pay the costs, amounting to about twelve dollars. The only mitigating circumstance to the doctor would seem to be that legal expenses have not been proportionally heavier than the fees for medical attendance.

— The *Sanitary Engineer* points out a possible danger in the water-supply of those southern cities that have been affected by the earthquake, which it may be well to bear in mind, and that is, that some of the water-pipes may have been displaced or cracked by the earth tremors. At some points these water-pipes pass through sewers, in which case, if broken and empty of water, a risk is incurred that would not exist if they were under pressure, and while there is little probability that there will be any dangerous leakage, its possibility should be recognized and guarded against. There is also some risk from injury to sewers, and from loosening of badly made joints in house-plumbing. A thorough house-to-house inspection from the sanitary point of view is a highly desirable thing for Charleston, and should be carried out within the next three or four months. All these things are, however, no doubt well understood by the sanitary authorities and physicians of Charleston, and will be attended to in due time.

BOSTON.

— The Board of Health of Boston, discovered last week a severe case of small-pox at the West End, and removed the patient to the Canterbury Street Hospital.

— Mr. William Cavanaugh, of Washington Village, has brought suit against the individual members of the Boston Board of Health, Messrs. Durgin, Babbitt, and Keith, and attached the property of each to the amount of $10,000, for damages to his property, caused by the erection of a dam there about four years ago, for the purpose of flooding the immediate territory, which was in a bad condition. The estate of ex-City Engineer Wightman, deceased, has also been attached for $10,000. Cavanaugh sued the city some time ago, but

the city solicitor had the case non-suited, pleading lack of responsibility. Cavanaugh now claims that the members of the Board and the ex-City Engineer were responsible.

NEW YORK.

A female patient recently died in a dentist's office in Brooklyn, E. D., while taking ether for the extraction of a tooth. A number of physicians labored unsuccessfully to resuscitate her, but the result of the autopsy made by the coroner has not been made known.

— The Brooklyn Board of Supervisors have followed out the recommendation of the Grand Jury, and made arrangements for the relief of the insane at the Flatbush Asylum. At a meeting of the Board held October 7th, Supervisor Pigott offered a resolution, which was adopted, that five temporary buildings, proposed by the Charities Commissioners, and so constructed as to meet the approval of the physicians of the Asylum and of State Commissioner Ripley Ropes, be erected at once on the county farm at St. Johnsland, L. I. The Supervisors were to meet again on the 10th, and award the contracts for these temporary structures: so that within a month and a half two hundred and fifty of the Flatbush patients can be removed to these new quarters.

— Dr. James Anderson, one of the most venerable and highly esteemed practitioners of the city, died October 7th. Although in his eighty-ninth year he enjoyed remarkably good health and was in his usual vigor until October 4th, when he was attacked with cholera morbus, the exhaustion from which proved fatal. He was born at the Battery at the lower end of New York, February 21st, 1798, and was descended from an old Dutch family. He began the study of medicine under the celebrated Dr. David Hosack, and in 1821 was graduated from the College of Physicians and Surgeons. After graduation he was associated in practice with his preceptor for a number of years, and during this period devoted much time to the quizzing of Dr. Hosach's numerous students. He was one of the early presidents of the New York Academy of Medicine, and was at one time President of the State Medical Society. He was also the founder and first President of the New York Physician's Mutual Aid Society.

— William Henry Dudley, President of the Collegiate Department of the Long Island College Hospital, died at his home in Brooklyn, on the 8th of October. The immediate cause of his death was pulmonary hæmorrhage occurring during an attack of bronchopneumonia; although his constitution was undermined by diabetes, from which he had been suffering for over two years. Dr. Dudley was born in Ireland in 1811, and was graduated from the Royal College of Physicians and Surgeons in Dublin, in 1833. Removing to the West Indies, he was made Health Officer at Port Maria, Jamaica, and was also elected a Fellow of King's College there. In 1841, Dr. Dudley came to New York and received a diploma from the College of Physicians and Surgeons in this city. He soon removed to Brooklyn, however, where his life-work has been the building up of the Long Island College Hospital. He was instrumental in its organization in 1859, contributing liberally of his private means and time to make it a success; and this is said to have been the first adoption in this country of the plan, since so generally in vogue, of connecting a hospital directly with a medical college for the purposes of clinical instruction. Dr. Dudley was, besides, one of the physicians of St. John's Hospital, and had a large private practice in Brooklyn, where he was greatly beloved for his many genial qualities. He was twice married, his first wife being Miss Emily M. Fitz Gibbons, of Jamaica, West Indies, and his second, Miss Charlotte G. Duckintz, of Brooklyn, and two sons and a daughter survive him.

Miscellany.

OBITUARY.—JOSEPH SAMPSON GAMGEE, F.R.S. Ed.

This well-known English surgeon died September 18, at his residence in Birmingham, at the age of fifty-eight. Five years ago Mr. Gamgee was laid by for some weeks with a serious attack of hæmaturia, which evidently left its mark upon his kidneys and his general health. He regained, however, a fair amount of strength, and was enabled to follow his ordinary avocations. Three weeks ago, before his death, while walking quickly along the street at Dartmouth he fell, injuring his hip. Though suffering acute pain, he was unwilling to admit that there was any grave damage, and though for the most part confined to his bed, he saw his patients and dictated his correspondence. After a fortnight, not being satisfied with his condition, he consented to have ether administered, and a more thorough examination made of his injury, the conclusion arrived at being that there was a fracture of the upper end of the right femur. Three days afterwards he became sick; the next day he vomited blood and had abdominal distension, and on the following day suppression of urine, death ensuing in the evening, with his intelligence unimpaired to almost the last moment.

Mr. Gamgee was born at Florence in 1828, and was consequently in his fifty-ninth year. The son of an eminent veterinary surgeon (still living in Edinburgh), at first he was destined for the same calling, but subsequently he became a student at University College and entered the medical profession, studying afterwards at Paris, Pavia, and Florence. During this course of education he gained that mastery of languages which in after-life adorned his career, and made him a facile exponent both of the writings and teachings of continental authors, especially French and Italian. This art also led to his appointment as corresponding member of several foreign learned societies, and gave him the opportunity of supplying abundant contributions to the literature of his profession from many sources. Exhibiting in his student days the promise of an exceptional and brilliant career, he became surgeon to the Queen's Hospital, Birmingham, in 1857, a post which he held until his illness in 1881, when he was appointed consulting surgeon.

Into the conduct of his duties at the Queen's Hospital he threw himself with intense zeal and activity, and in both the professional and administrative work labored unceasingly to promote the reputation and welfare of the institution. The extension of the hospital and the origin of the Hospital Saturday collections were mainly owing to his influence and exertions, and in the details of these movements he gave valuable assistance and incessant labor. While president of the Medical Institute, by his unwearying devotion, he added largely to the library and the fund connected with it; and as president of the Birmingham Branch and Midland Medical Society he worked ardently in their respective interests. Among his writings were a work "On the Treatment of Fractures and on the Treatment of Wounds," and various monographs—"Harvey and Cæsalpinus," "Vivisection and Human Surgery," "The Hospital Saturday Movement," etc. As a strenuous advocate of treating wounds by dry and infrequent dressing, rest and immobility, his teaching was expressed in a form which exhibits a wide knowledge of surgical literature and his complete mastery of fine and graceful writing.

Mr. Gamgee was much more than a great surgeon; as a citizen and as a man he left a strong impress not only on his own com-

munity but on the tone of his profession everywhere. Many Americans who have seen him in his own home will retain pleasant memories of his hospitality and kindness to them. He was an honorary member of the Massachusetts Medical Society.

Correspondence.

SUBCUTANEOUS INJECTION OF SALT SOLUTION.

VIENNA, Sept., 29, 1886.

MR. EDITOR, — I lately witnessed the subcutaneous injection of 50 ccm. of a salt solution into the body of a boy seven years old, by Professor Monti, and believing it may be of interest to your readers and perhaps at some time useful, I send you this brief description of his method. The requisites are, a piece of rubber tubing about six feet long, a large hypodermic needle and a graduated beaker containing a solution of salt. The salt solution is heated to 100° F., and then placed about four feet above the patient on a stool that rests on the top of a table. The hypodermic needle is attached to one end of the rubber tubing. The tubing is filled with water, and one end is inserted into the salt solution, then the needle end of the tube is lowered and the contents are allowed to run off until the stream becomes warm from the salt solution in the beaker. The needle is now inserted into the subcutaneous tissue while the stream is flowing. At this moment an assistant reads the level of the fluid in the beaker. This done one can tell exactly by means of the scale on the beaker how much of the solution has been injected. The tissue is distended by the fluid forming a tumor which disappears in the course of an hour or two. In the case I saw the injection was made an inch and a half below the naval, and a half inch to the right of the median line. The swelling was an inch and a half in diameter and about half an inch in height. The whole time occupied in giving the injection and making the necessary preparations did not exceed twenty minutes. The method has been employed in the collapse of cholera infantum and may further be found useful in some of those cases where intravenous injection has formerly been resorted to. Yours truly,

ALBERT H. TUTTLE, S.B., M.D., (Harv.)

FOURTEENTH ANNUAL MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION AND CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH.

TORONTO, ONT., Oct. 8, 1886.

MR. EDITOR, — The meeting of the American Public Health Association has this year a peculiar significance in its assembling for the first time without the limits of the United States. It has grown beyond the anticipation of its founders, and now embraces nearly the entire continent in its membership. Progress in sanitary matters in the Dominion has been rapid during the past four years, and the terrible scourge at Montreal in 1885 served to increase the zeal of public health authorities, and induce our provincial neighbors to seek the aid and support of the Association.

The Conference of State Boards of Health is a distinct body, which during the past three years has met at the same time and place with the Association. It is a deliberative body, composed of representatives from the State and Provincial Boards of Health. Its purposes are quite similar to those of the Association; so much so, in fact, that a decided movement was made this year to unite the two bodies, by making the Conference a Section of the Association. The measure was defeated.

The Conference met on Monday, October 4th, at Queen's Hotel, and spent the day in the consideration of various subjects pertaining to the administration of sanitary authorities both general and local. The objects attained by the Conference may be summed up briefly as follows:

A series of resolutions commending the plan of interstate notification of infectious diseases. The recent outbreak of yellow-fever at Biloxi, Mo., and the small-pox epidemic at Montreal, were urged as illustrations of the importance of such a course. A resolution was adopted, disapproving the drainage plan of the State Capitol of Indiana. Other subjects discussed were: A summary of sanitary laws, the infectious nature of consumption, the organization of county boards of health, the regulation of medical practice, and the transportation of dead bodies. Resolutions upon the latter subject were rejected.

The Conference adjourned, after several brief sessions, to meet at Washington, D.C., in September, 1887.

The meetings of the Public Health Association were held at Shaftesbury Hall, except the meeting on Tuesday evening. The papers upon special subjects were valuable, while those which were of a general nature were not burdened with originality or usefulness. Fortunately, the latter were few in number.

The morning session of Tuesday was devoted to the subject of Sewerage and Sewage-disposal. It was attended by many of the citizens of Toronto, who are just now suffering with the throes of a civil earthquake in the shape of a proposed sewer question.

An excellent paper by Dr. George Baird, of Wheeling, W. Virginia, advocated the "Destruction of Garbage and Night-soil by Fire." The paper described the relative situations of Wheeling, Va., and Bellair, Ohio, the drinking-water of the latter place being polluted by the night-soil of the former place, showing the folly of the claim that a running stream of water will purify itself in a few score feet. With greater care for the health and comfort of their neighbors, than is usual in the case of contiguous cities, the city of Wheeling undertook a series of experiments and finally succeeded in constructing a furnace which was eminently satisfactory, the night-soil being mixed with fine coal before burning. Natural gas is also employed in reducing the material.

At a later meeting the same writer offered another paper upon the subject of "Sanitation in the Matter of Street-Paving."

Toronto, like Chicago, draws its water-supply from the same lake into which its sewage is poured. Hence the local interest in the subject of sewerage. The papers presented by local physicians and engineers were of a high order of merit, treating the subject both in a general manner and with reference to the special needs of Toronto.

Dr. G. B. Thornton, of Tennessee, offered a paper entitled "Six Years of Sanitary Work in Memphis," in which he detailed the operations of the health authorities in that city which had been undertaken since its last great visitation by yellow-fever. Special mention was made of its sewerage system. The paper was followed by discussions by Cols. Waring and Hadden in further explanation of the plan which had been adopted.

Dr. D. E. Salmon, of Washington, D.C., read a paper on "Recent Progress in the Investigation of Hog Cholera." He said recent discoveries showed the disease was caused by bacteria. Sterilized culture liquid used as an inoculant was found to protect pigeons against the living germs. The experiment had not been yet carried out to a conclusion in regard to protecting hogs. The microbes multiplied with extraordinary rapidity in water. This experiment showed these germs had power of multiplying in ordinary drinking-water, such as is taken from our rivers and streams. A solution of mercuric iodide — proportion one to two millions — was found to destroy the germs. The question therefore suggested itself whether the fluids and tissues of hogs could not be so impregnated with this disinfectant as to render them absolute proof against the bacteria.

Dr. A. N. Bell read the report of the Committee on the "Disinfection of Rags." The report was quite long, discussed other matters foreign to the subject, and provoked a lively discussion which lasted till midnight. The resolutions which accompanied the report were referred to the Executive Committee, and were finally passed, after being modified, at a subsequent meeting.

Excellent papers were offered on Thursday evening by Dr. Bryce, of Toronto, on the "Decomposition of Albuminoid Substances and some Sanitary Problems connected therewith." By Archibald Blue, Esq., on "Food in its Relation to the Distribution of Wealth," and also by Dr. H. P. Yeomans, upon "The Best Methods of Teaching Hygiene in the Public Schools, as well as the Means for securing Uniformity in such Instructions."

Dr. J. B. Russell, Health Officer of Glasgow, Scotland, who had been made an honorary member of the Association, gave a brief address in which he spoke in a happy manner of his impressions of American sanitation as compared with that of Scotland.

The Lomb Prize Committee reported that no prizes would be awarded this year, no essays or plans of sufficient merit having been offered.

I cannot close without special reference to the entertainment of welcome on Tuesday evening, and the President's Annual Address. The exercises were held in the Normal School building. Addresses of welcome were made by Dr. C. W. Covernton, Hon. A. S. Hardy, and Mayor Howland, of Toronto.

The admirable address of the retiring President, Dr. H. P. Walcott, was listened to with unusual attention.

The study of infectious diseases, criticism of faulty methods, and sanitary fallacies, State supervision of sanitary work, and appropriation for the same, the organization of boards of health, local and general, received due consideration. His allusions to local matters were timely and dignified.

Massachusetts was represented at the meetings by Drs. Walcott, Jones and Abbott, as delegates from the State Board and Drs. Durgin, Holt and Rice from local boards.

X.

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 2, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	677	319	26.40	12.90	14.35	1.95	5.55
Philadelphia	971,363	372	133	17.82	15.66	4.86	5.94	5.13
Brooklyn	690,000	309	146	29.00	12.54	12.54	2.32	9.24
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	181	68	38.25	22.93	19.55	6.80	6.80
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	134	52	20.98	15.54	8.88	2.96	1.48
Cincinnati	325,000	118	54	34.85	10.20	7.65	5.95	11.90
New Orleans	238,000	111	42	22.50	12.60	10.80	—	.90
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	107	43	20.46	10.23	3.72	3.72	4.65
Pittsburgh	190,000	67	34	26.64	10.36	4.44	4.44	8.88
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	—	—	—	—	—	—	—
Charleston	60,145	43	15	16.31	18.64	6.99	—	—
Worcester	68,383	21	10	14.28	4.76	14.28	—	—
Lowell	64,051	30	13	39.96	3.33	16 66	6.66	10.00
Cambridge	59,660	—	—	—	—	—	—	—
Fall River	56,863	22	13	28.44	4.55	31.85	—	4.55
Lynn	45,861	13	3	7.69	23.07	7.69	—	—
Lawrence	38,825	15	5	20.00	13.33	13.33	6.66	—
Springfield	37,577	15	7	46.66	6.66	26.66	—	—
New Bedford	33,393	21	8	33.33	9.52	19.04	14.28	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	15	5	20.00	—	6.66	13.33	—
Holyoke	27,894	9	4	11.11	—	—	11.11	—
Chelsea	25,709	6	3	33.33	—	33.30	—	—
Taunton	23,674	13	3	38.45	7.69	15.38	23.07	—
Haverhill	21,795	12	4	41.66	16.66	8.33	8.33	25.00
Gloucester	21,713	5	1	20.00	20.00	—	—	—
Brockton	20,783	—	—	—	—	—	—	—
Newton	19,759	4	3	—	—	—	—	—
Malden	16,407	6	4	33.33	33.33	33.30	—	—
Fitchburg	15,375	5	1	20.00	20.00	20.00	—	—
Waltham	14,609	5	1	20.00	20.00	—	20.00	—
Newburyport	13,716	7	3	42.84	28.56	—	—	42.84
Northampton	12,896	—	—	—	—	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,343: under five years of age 997: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 580, consumption 296, lung diseases 150, diarrhœal diseases 254, diphtheria and croup 150, typhoid fever 82, malarial fever 46, scarlet fever 23, whooping-cough 21, cerebro-spinal meningitis 16, measles five, erysipelas three. From malarial fevers, New Orleans 12, New York and Baltimore eight each, Brooklyn and Charleston four each, Philadelphia two. From scarlet fever, Cincinnati seven, Brooklyn and Boston four each, Philadelphia and Pittsburgh three each, New York two. From whooping-cough, New York and Brooklyn seven each, Boston and Pittsburgh two each, Philadelphia, Cincinnati, and District of Columbia one each. From cerebro-spinal meningitis, New York eight, Springfield three, Cincinnati two, Philadelphia, Pittsburgh and Gloucester one each. From measles, New York four, Baltimore one. From erysipelas, Lowell two, Cincinnati one.

In the 22 cities and greater towns of Massachusetts, with a population of 1,032,650 (population of the State 1,941,465), the total death-rate for the week was 21 71 against 21.50 and 21.47 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending September 18th the death-rate was 22.6. Deaths reported 3,942: infants under one year of age 1,656; acute diseases of the respiratory organs (London) 168, diarrhœa 925, fever 58, whooping-cough 49, scarlet fever 43, measles 32, diphtheria 25.

The death-rates ranged from 14.9 in Bristol to 40.8 in Norwich; Birkenhead 19.7; Birmingham 26.4; Hull 30.8; Leeds 29.1; Leicester 23.9; Liverpool 26 2; London 17.6; Manchester 31.4; Nottingham 24.4; Sheffield 27.9; Sunderland 26.6.

In Edinburgh 13.9; Glasgow 24.2; Dublin 27.5.

For the week ending September 18th, in the Swiss towns, there were 36 deaths from diarrhœal diseases, consumption 25, lung diseases nine, whooping-cough three, typhoid fever and puerperal fever each one.

The death-rates were: at Zurich 11.5; Geneva 9.1; Basle 14.8; Berne 10.7.

The meteorological record for week ending October 2, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Oct. 2, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, . . 26	29.893	69.2	78.3	52.2	88.0	73.6	82.0	81.0	S.W.	S.W.	W.	14	19	17	O.	T.	C.	—	—
Monday, . . 27	29.941	64.3	79.7	55.0	83.0	62.0	100.0	81.7	W.	E.	E.	12	8	12	O.	F.	R.	—	—
Tuesday, . . 28	29.901	59.7	62.4	54.0	100.0	100.0	100.0	100.0	S.E.	N.	E.	9	4	6	R.	R.	R.	—	—
Wednes., . 29	29.938	59.4	67.0	53.8	83.0	51.0	78.0	70.7	N.	N.W.	N.	15	7	4	O.	F.	C.	—	—
Thursday, 30	29.911	53.8	59.1	46.2	80.0	85.0	95.0	86.7	N.W.	E.	N.	4	13	6	F.	O.	O.	—	—
Friday, . . . 1	29.828	51.5	68.0	45.0	93.0	55.0	51.0	66.3	W.	N.W.	N.W.	8	20	9	O.	F.	C.	—	—
Saturday, . 2	30.255	46.1	55.1	37.1	66.0	44.0	63.0	57.7	W.	W.	N.W.	6	16	6	C.	F.	C.	32.00	0.45
*Mean, the Week.	29.952	56.3	69.9	49.0				77.7											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 2, 1886, TO OCTOBER 8, 1886.

GIBSON, JOS. R., major and surgeon. Granted two months' leave of absence, from September 25, 1886, on surgeon's certificate of disability, in lieu of the unexpired portion of the ordinary leave of absence granted him in S. O. 158, A. G. O., July 10, 1886. S. O. 227, A. G. O., September 30, 1886.

GARDNER, WM. H., major and surgeon. Ordered from Department of Texas to Department of the East. S. O. 227, A. G. O., September 30, 1886.

MATTHEWS, WASHINGTON, captain and assistant surgeon. Granted leave of absence for one month and twelve days, with permission to go beyond sea. S. O. 232, A. G. O., October 6, 1886.

FISHER, W. W. R., first lieutenant and assistant surgeon. Leave of absence extended one month. S. O. 230, A. G. O., October 4, 1886.

BORDEN, WM. C., first lieutenant and assistant surgeon. Relieved from temporary duty at Fort Bridger, Wyo., and ordered to return to his station, Fort Douglass, Utah. S. O. 126, Department of Platte, October 2, 1886.

KENDALL, WM. P., first lieutenant and assistant surgeon. Granted leave of absence for one month. S. O. 81, Division of the Pacific, September 24, 1886.

HAMMOND, JOHN F., colonel (retired). Died at Poughkeepsie, N. Y., September 29, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING OCTOBER 9, 1886.

JAMES SUARDS, medical director. Will convene Medical Board, October 6, 1886.

BROWNE, J. MILLS, medical director. Ordered to report to president Medical Board, October 6, 1886.

DEAN, R. C., medical director. Ordered to report to President Medical Board, October 6, 1886.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE WEEK ENDING OCTOBER 2, 1886.

PURVIANCE, GEORGE, surgeon. Granted leave of absence for twenty-five days, September 30, 1886.

STONER, G. W., surgeon. Granted leave of absence for twenty-three days, October 1, 1886.

CARTER, H. R., passed assistant surgeon. To proceed to Galveston, Texas, as inspector, September 30, 1886.

AMES, R. P. M., passed assistant surgeon. Granted leave of absence for thirty days, to take effect when relieved, September 30, 1886.

WASDIN, EUGENE, assistant surgeon. Ordered to examination for promotion, September 20, 1886.

BROOKS, S. D., assistant surgeon. Granted leave of absence for thirty days, to take effect when relieved, September 30, 1886.

WILLIAMS, L. L., assistant surgeon. Relieved from duty at Mobile, Ala.; ordered to Marine Hospital, Wilmington, N. C., September 27, 1886.

PERRY, F. B., assistant surgeon. Relieved from duty at San Francisco, Cal.; ordered to Marine Hospital, St. Louis, Mo., October 1, 1886.

THE CHARLESTON MEDICAL SCHOOL.

The Medical Faculty of Harvard University, in response to an appeal from the Dean of the Charleston Medical School for aid in restoring their building shattered by the earthquake, have appointed the undersigned a committee to collect subscriptions for that purpose.

The undersigned will gladly receive any sums, however small, for this worthy object, which may be sent to,

HENRY P. BOWDITCH, *Dean Harvard Medical School.*
THOMAS DWIGHT, 235 *Beacon Street.*
J. COLLINS WARREN, 58 *Beacon Street.*

DEATH.

Died in Birmingham, England, September 18, 1886, Joseph Sampson Gamgee, F.R.S. Ed., M.M.S.S. Hon., aged fifty-eight years.

BOOKS AND PAMPHLETS RECEIVED.

Woman's Medical College of the New York Infirmary. Eighteenth Annual Catalogue and Announcement June, 1886.

Des Cataractes et de leurs Opérations. Conférences Cliniques Professées Par le Dr. Galezowski et Recueillies Par le Dr. Boucher Médecin-major de 1re classe. Paris. 1886.

A Treatise on the Practice of Medicine. By Roberts Bartholow, M.A., M.D., LL.D. Sixth Edition. Revised and enlarged. New York: D. Appleton & Co. 1886.

Handbook of Diseases of the Ear for the Use of Students and Practitioners. By Urban Pritchard, M.D. (Edin.) F.R.C.S. (Eng.) With Illustrations. Philadelphia: P. Blakiston, Son & Co. 1886.

Paralyses Cerebral Bullar and Spinal. A Manual of Diagnosis for Students and Practitioners. By H. Charlton Bastian, M.A., M.D., F.R.S., F.R.C.P. With numerous illustrations. New York: D. Appleton & Co. 1886.

The Artificial Feeding of Infants. By John M. Keating, M.D., Visiting Obstetrician to the Philadelphia Hospital, and Lecturer on Diseases of Women and Children. Physician to St. Joseph's Hospital. Fellow of the College of Physicians, etc. (Reprint.)

Zur Lehre vom Granuloma Fungoides. (Mycosis Fungoides Alibert.) Von Dr. Carl Hochsinger Secundararzt I. Cl. des K. K. Allgemeinen Krankenhauses in Wien, und Dr. Eduard Schiff, Docent für Dermatologie und Syphilis an der Wiener Universität. Wien. 1886.

A Text-Book of Human Physiology including Histology and Microscopical Anatomy with reference to the requirements of Practical Medicine. By Dr. L. Landois, Professor of Physiology and Director of the Physiological Institute, University of Greifswald. Second American, Translated from Fifth German Edition with Additions by William Stirling, A.M.D., Sc.D. With 583 illustrations. Philadelphia: P. Blakiston, Son & Co. 1886.



Lecture.

RENAL CALCULUS, ITS DIAGNOSIS AND TREATMENT.

BY JAMES TYSON, M.D.,
Physician to the Hospital and Professor of General Pathology and Morbid Anatomy in the University of Pennsylvania.

A CLINICAL LECTURE DELIVERED AT THE PHILADELPHIA HOSPITAL.

GENTLEMEN,— I wish to call your attention to-day to a subject of considerable practical importance and one which we do not often have the opportunity of treating in the way which I propose to-day. The subject is that of renal calculus: its diagnosis and its management. The immediate suggestion for this lecture is a case which recently came under observation in this house, and whose fatal termination and autopsy have given us the morbid specimens I propose to show you.

I shall in the first place briefly give you the history. The patient was a woman, forty years of age and married. She had no knowledge of her relatives. She had lived in a healthy country place for fifteen years. She has been married and enjoyed fair health up to eight months ago, when she began to have pain in the left side, with frequent and painful micturition. In the course of a month or two, these symptoms disappeared, but the pain returned at times. About one month before admission she awoke in the morning with violent pain in the left side. This pain continued and was accompanied by loss of flesh and frequent vomiting. The pain was increased by straightening out the legs.

The patient was admitted to the hospital March 24th, 1886, with this meagre preliminary history, complaining of a dull aching pain in the splenic region, tenderness over the spleen and over the left kidney. The temperature was 100°, and the woman was weak and nervous. The most tender spot was mid-way between the crest of the ilium and the lower border of the ribs. The urine contained an enormous amount of pus, fully one-third of its bulk.

In the history of this case we note the following points: extreme pain, varying somewhat in severity, but always present, tenderness, most marked midway between the border of the ribs and the crest of the ilium, and purulent urine. Under such circumstances, there is no difficulty in pointing out the organ affected. Given purulent urine with pain in the locality described and tenderness so distinct and so easily determined, there must be something wrong with the left kidney.

The next question naturally asks the cause of the suppuration? There are three principal causes of pus in the urine where the kidney is distinctly involved. These are tuberculosis of the kidney, impacted calculus and what is known as surgical kidney.

It is well known that tuberculosis may affect the mucous membrane of the pelvis of the kidney and gradually encroach upon the substance of the organ, infiltrate it and break down, infiltrate again and break down, and thus continue, until the organ may be converted into a cavity filled with pus, more or less inspissated, and the walls covered with cheesy miliary tubercles.

The so-called surgical kidney, is simply a suppurative affection of the kidney, the result of surgical disease. The term is not very well applied. It is usually the result of inflammatory disease of the bladder, the inflammation extending upwards along the ureter until the kidney becomes involved. This condition is produced by various causes, most frequently, probably, by stone in the bladder. Although a distinction is sometimes made between surgical kidney and the condition of the kidney resulting from impacted calculus, there is no essential difference in the nature of the process. Where suppuration occurs as the result of impacted calculus, the process is exactly like that where the inflammation is the result of extension from the bladder.

Which of these conditions had we to deal with in the case described? Under the most favorable circumstances, we are often compelled to allow this matter to rest in doubt. It occurred to us that taking the symptoms described in connection with the cachexia which this patient presented to a marked degree, there might be here tuberculosis of the kidney. Seeking further information on this point, the urine was examined for the tubercle bacillus, but none were found. We did not attach much importance to this, for although it is true that in tuberculous affections of the kidney the bacillus has been found, yet its absence cannot be said to exclude the presence of such disease. We therefore did not conclude from this negative result that tuberculosis was absent, and I must admit that I always inclined to the view that this was a case of tuberculosis. This view was favored by the absence of any definite history of nephritic colic. Where the suppurative process is due to impacted calculus, we usually are able to trace a long history of pain in the region of the kidney. In this instance we could obtain a history of pain dating back only eight months, and when the specimen is examined, this short history will seem still more surprising. Surgical diseases starting from the bladder and causing trouble in the kidneys, are accompanied by symptoms of irritation of the bladder. Nothing of this kind was present in this particular instance. Therefore taking all the evidence into consideration, while realising the difficulties of making a positive diagnosis, I felt that the probabilities were in favor of tubercular disease. As an aid to diagnosis, we introduced the aspirating needle in the region of the kidney, but the pus was not reached.

The woman gradually sank and died a few days ago, and I have the specimen here to show you. Extraordinary and astonishing as this may strike you, let me assure you that this condition with these symptoms is not infrequent. Here is a stone which was removed from this case, and it is one of the most remarkable specimens that I have ever seen. It has a base or trunk from which spring four principal prolongations. The base corresponds to the pelvis of the kidney and the four prolongations to the four calices. The extensions of the stone are further subdivided to correspond to cavities which they filled in the organ. It is of course unnecessary to say that this large calculus must have occupied longer than eight months in its formation. Whether or not careful examination earlier than eight months ago, would have given evidence of disease of the left kidney or whether the woman had had symptoms before this time and had forgotten them, matters not. The autopsy has revealed this extraordinary concretion

filling up a large portion of the kidney substance, with a history of only eight months pain.

Let us return for a moment to the question of diagnosis. It was plain to us that we had to deal with disease of the left kidney, but beyond this point there was acknowledged uncertainty, although there was a leaning towards the idea of tuberculosis. This proved to be erroneous. Are there any circumstances under which a more certain diagnosis is possible? There are, and it was partly with a view to bringing these to your notice that I selected this case as a text. If we had at any time been able to collect sediment from the urine, or small calculi or their fragments capable of analysis, the nature of the case might have been determined. The difficulties in the diagnosis of renal calculi are often much less than are commonly supposed, because their analysis is much easier than is commonly supposed. It is really a very easy matter to get at the composition of a calculus.

In the first place, under what circumstances would a renal calculus be suspected? If there is a history of excruciating pain in the region of the kidney, extending into the groin, paroxysmal in character, a pain which is so severe that words cannot describe it, you at once suspect that there is a stone in the kidney which is seeking to find its way into the bladder. I think that there is no condition which is likely to be confounded with this. Given a severe paroxysmal pain in the region of one or both kidneys, extending to the groin with retraction of the testicle in the male, I know of only one condition that can cause it. It is true that there is described in the books what is called neuralgia of the kidney, a condition in which there are the symptoms described without the presence of a stone. For myself I doubt the existence of such a condition as idiopathic neuralgia of the kidney. What has been termed neuralgia of the kidney is in all probability nephritic colic, depending on the presence of gravel. For practical purposes, therefore, we may throw out of the question nephralgia or neuralgia of the kidney.

It is also true that we have here severe muscular pains which might be confounded with pain in the kidney. The majority of persons who think that they have kidney disease have their attention directed to it by the occurrence of pain in the lumbar muscles which they attribute to the kidney, the idea being that renal disease is associated with pain over the kidney. In point of fact, real kidney disease other than calculus disease, is rarely attended with pain in the back. The pain of lumbago or rheumatism of the lumbar muscles is different from that due to impacted calculus. Under ordinary circumstances the former pain is not so sharp. It is true we have almost all experienced at one time or other a sharp lumbar pain momentary in duration, most frequently coincident with a sudden motion or twisting of the body. But this is of short duration as compared with the pain of nephritic colic. The other lumbar pains of rheumatism are not so severe, although they may be of long duration. They are greatly aggravated by any movement of the body. They are also more readily removed.

There is one other rare condition which produces pain like that of nephritic colic to which allusion should be made, and that is floating kidney. Sometimes a floating kidney is so loose that it twists upon itself, closing the ureter very much as a rubber-hose is obstructed when it is twisted upon itself. Such obstruction causes an accumulation of urine back of it and gives rise to intense pain which is quite like that of nephritic colic. This, therefore, should be remembered.

Having made the diagnosis of nephritic colic we must not stop here, for it becomes a matter of extreme importance in treatment, to ascertain the nature of the stone causing the irritation. A rational treatment demands this. And while we cannot always do it, we frequently can, indeed more frequently than is commonly done, and the treatment which is so often only palliative and empirical, may become curative and rational. Such a diagnosis demands the presence of sediments in the urine or the passage of a small calculus.

Where there are constant or repeated sediments of uric acid or oxalate of lime recognized by the microscope, we are thus at once informed of the nature of the stone. Sometimes a small stone is passed, the structure of which cannot be unravelled by the microscope. Other means must then be used to determine its composition. In the first place there is something in the appearance of a stone which will aid in the diagnosis. Taking this large stone, I have little doubt that it is a phosphatic stone, composed largely of phosphate of lime. It is exceedingly rare, in fact, I think it never happens that a stone with any other composition reaches this size. In the second place, the stone is white in color. This is the color of phosphatic stones, but also that of oxalate-of-lime calculi, although they never reach the size of this one. They are further characterized by their roughness. On the other hand, stones composed of uric acid and their compounds are apt to be smooth and of various shades of red; at other times they are fawn-colored and again white.

I have here some samples of stone which I shall examine. Here is a part of a stone which was removed from the kidney of a little boy, ten years of age, who died under my care. This boy had purulent urine for a long time and for years had suffered with pain. On two occasions stones were removed from the bladder by operation. After death this large stone was found in the pelvis of the kidney. Here are also other smaller stones, some of them smooth and others rough.

The necessary apparatus for analysis is simple. In the way of instruments, you need a little piece of platinum foil, and a pair of forceps to hold it, or a platinum spoon, a mortar and pestle, some nitric acid, acetic acid, hydrochloric acid and ammonia. A fragment of the stone to be examined is reduced to powder in the mortar. The piece of stone which I shall use is white in color. As I have said, the phosphatic stones are white, so are those of oxalic acid. Uric-acid stones are apt to have a reddish tinge, but they may be almost white on the surface, at least. In this case you will note that although the stone was white, the powder presents a reddish tinge. I place a small portion of the powder on the platinum foil and heat it in the flame of a spirit-lamp. Instantly the powder blackens and partially disappears. In a few seconds, it is entirely gone. I need not go a step further in the examination of this stone. Given a powdered stone which disappears upon the application of heat, what is it? It is either organic matter, or pure uric acid, or almost pure uric acid, or one of those extremely rare forms of stone, known as cystin,

xanthine and urosteolith. The first never assumes a stony hardness, and the last three are so rare that they do not occur in an average man's life. I have seen but one cystin stone and none of the others. It may therefore be concluded with almost absolute certainty that this stone is uric acid. But this may be rendered absolutely certain by another test, the murexide test. A little of the powdered calculus is placed on a plate and dissolved in nitric acid. Heat is then applied and the acid evaporated. A little solution of ammonia is next added and you observe the beautiful purple color which comes out at the point of contact. This proves that this is a uric-acid stone.

Suppose, however, that on the application of heat the stone does not entirely disappear? We should then again apply the murexide test and if we obtain the reaction, the stone must consist of uric acid in combination with bases, and clinically speaking, this is equivalent to uric acid.

Taking another stone, the composition of which I do not know; I powder it and heat it to redness on the platinum foil. It at once becomes black, but a considerable residue is left. I then take a small fragment of the original stone, and without powdering, place it in the platinum spoon, and again apply heat. You will recall that in these examinations the question practically resolves itself into this: Is the stone composed of uric acid, oxalate of lime, or phosphates? A stone made up of triple phosphates of ammonium and magnesium is characterized by the peculiarity of fusing on the application of heat — fusible calculus. This enables us to recognize such a stone. This particular example does not fuse.

We, therefore, know that it is not composed of triple phosphates. It does not burn up, it does not melt into a bead; it is, therefore, either phosphate of lime or oxalate of lime. If it is an oxalate-of-lime stone, it has, by the process of heating, been converted into carbonate of lime.[1] If it is a phosphate-of-lime stone, its composition has not been altered by the application of heat. To the burned powder I now add acetic acid; if it dissolves with effervescence, it is derived from an oxalate-of-lime stone; if there is no effervescence, it is phosphate of lime. The best way to apply this test is to put some of the stone, which has been heated, on a glass slide, and apply a thin cover. The acetic acid is allowed to run in at the edges. If it is desired, under the microscope, with a low power, the evolution of the bubbles of carbonic acid may be easily studied, but we shall adopt the rougher method without the microscope. No bubbles of carbonic acid are liberated. I conclude, therefore, that the stone is phosphate of lime. A very rare stone in man, although common in horses, is the carbonate-of-lime stone. This is recognized by treating the *original* powder with acetic acid, when it will dissolve with effervescence, whereas, the oxalate-of-lime stone does not dissolve with efferverscence until it has been heated to a red heat.

To recapitulate, you are to powder the stone and apply heat. If it disappears, it is in all probability uric acid, or compounds of uric acid. If there is any doubt, the murexide test may be applied. If the stone does not disappear upon being incinerated, it is composed either of phosphates or of oxalate of lime. If it is the triple, or ammonio-magnesian phosphate, the application of heat to a piece of the original stone will melt it into a bead; if it does not melt, it is either phosphate of lime or oxalate of lime. If it is oxalate of lime, the incineration will convert it into carbonate-of lime, which, in acetic acid, will dissolve with effervescence; if it is phosphate of lime, it dissolves without effervescence. Thus, with very little trouble, we may, with sufficient accuracy for practical purposes, ascertain the composition of a calculus. The bases are not ascertained, but this is not necessary.

Having determined the composition of the stone, what will be the treatment? The uric acid and oxalate of lime call for one treatment, the phosphates for another widely different. The latter is much more difficult to dissolve than the former. Uric acid is soluble in alkalies; oxalate of lime in neither acids or alkalies. Uric-acid sediments are thrown down in urine of acid reaction and dissolved by alkalies. The indication, therefore, is to give alkaline diluents, to render the urine alkaline, and if you do not cause the solution of the stone, you may, at least, prevent it from increasing in size. The experiments of Dr. Roberts, of Manchester, are almost too well known to be repeated. He imitated with alkaline solutions the dropping of the urine from the kidney into the bladder upon uric-acid calculi, and was able to effect a certain degree of solution. Whether this will take place in the body or not we do not know, but it is a rational method of treatment, and will tend to prevent the stone from enlarging, and as the passages enlarge, the stone may descend. The spasmodically contracted ureter, which grasps the stone, may, after a time, relax and permit the latter to drop into the bladder. If you can keep the stone from becoming larger, you favor this result.

The correct treatment for uric acid is, therefore, the alkaline treatment. For this purpose any alkali may be used, such as citrate or acetate of potassium. I prefer the citrate of potassium, in twenty-grain doses, four times a day, each time in eight ounces of water. Dilution is very important. It is of the greatest importance that you should, as it were, wash out the tissues of the patient with a tendency to gravel, in order to get rid of the *débris* of tissue metamorphosis. The introduction of large quantities of water into the system is an important element in the treatment. It is to the good effects of such treatment that the reputation of many of the mineral springs in the treatment of gravel is due. The introduction of plain water will accomplish this result as well as many of the spring waters. When, however, we come to springs like those of Vichy, which contain a large quantity of alkali, you can understand how useful they must be in the treatment of this form of calculus.

The same plan applies to the oxalate-of-lime calculus, but with less prospect of success, so far as solution of the stone is concerned. You cannot dissolve the oxalate of lime with acids or alkalies of such strength as it would be proper to use in the body. At the same time, the methods which prevent the formation of uric acid will prevent the formation of oxalate of lime. In the treatment of both of these varieties diet is of the greatest importance. In neither of them should the patient be allowed to eat a large amount of nitrogenous food, as meat or eggs. Fresh, succulent vegetables may be allowed in some cases, with a moderate amount of meat, or in bad cases, no meat at all. If there is one condition in which the

[1] For this, too high a degree of heat should not be applied. A long-continued white heat will calcine the oxalate of lime into lime; a red heat is sufficient to convert into the carbonate.

good reputation of a pure milk diet is justified, it is in the treatment of uric-acid calculus. So often have I been successful in obstinate cases of frequently-recurring uric-acid gravel with the pure skim-milk treatment, that it is the first thing that I offer the patient. I have noticed that if the skim-milk diet is kept up for a month or six weeks, and then stopped, the attacks of colic do not recur. In carrying out this plan of treatment, I recommend that during the first day, a glass of milk be taken every two hours. After this, the quantity is gradually increased until sufficient to satisfy the patient is taken. The quantity required to sustain life varies between three and seven quarts per day. It depends partly upon the size of the patient, and the amount of exercise taken. The milk acts both as a diluent and as an alkaline fluid. One set of vegetables should be avoided in the diet of persons having an oxalic diathesis, and that is those containing oxalic acid, such as tomatoes, sorrel, and especially the pie plant.

The importance of the diagnosis is shown in the fact that if the stone is composed of phosphates, the milk diet is much less valuable as a cure. The indication is here to increase the acidity of the urine, but while it is true that the phosphates are soluble in acids, it is, practically speaking, impossible to give acids in amounts sufficient to affect the calculus without injuring the system. By the use of benzoic acid, in ten-grain doses, the reaction of the urine may be rendered acid, and the further deposition of phosphates may be thus prevented, but nothing can be done towards dissolving the stone. Fortunately, most calculi are of the uric-acid variety. In phosphatic calculi, you can simply hope to prevent increase in size by rendering the urine acid, and in the course of time, if not too large, it may descend into the bladder. If too large for this, there only remains the operation of nephro-lithotomy, the growing frequency of which seems to be justified by its results.

Original Articles.

OPERATIONS ON NERVES.

BY MAURICE H. RICHARDSON, M.D.,
Surgeon to the Massachusetts General Hospital, and to the Carney Hospital.

I. Resection and Suture. (*a*) Musculo-Spiral, (*b*) Median, (*c*) Ulnar.
II. Primary Suture. (*a*) Ulnar, two cases.
III. Excision for Pain. (*a*) Middle cutaneous of thigh, (*b*) Long-saphenous. (*c*) Inferior dental, (*d*) Infra-orbital.
IV. Stretching. (*a*) Spinal accessory for spasmodic wry-neck.

The cases recorded below were treated at the Massachusetts General Hospital during the past fifteen months, with the exception of the last, which was at the Carney Hospital. As will be seen, some of the cases are complete, while others are still under observation.

NERVE SUTURE.

Case I. Injury to median nerve from bursting of bottle. Healing. Painful neuralgia in fingers and thumb, with loss of power in thumb. Removal of injured portion, suture, relief of pain, and restoration of motor function.[1]

Patient, J. C., a young man, bar-tender, was injured by the bursting of a ginger-tonic bottle July 20th, 1885, in the left wrist in front. The cut healed readily, but there was loss of sensation in the middle and fore-fingers and the palmar surface of the thumb. Accompanying the loss of sensation there was severe pain in the thumb and palm of the hand. This symptom of severe pain led him to come to the Nervous Department of the hospital where Dr. Putnam examined him and recommended an attempt to relieve the symptoms by surgical means.

July 18th, 1885, operation with ether.

The median nerve was quickly exposed at the point where it was supposed to have received injury, about one and one-half inches above the palm. The nerve was found involved in the cicatrix and almost entirely severed, being united by only a few fibres. The whole nerve was isolated from the surrounding parts and the injured portion entirely excised by a transverse section above and below. The ends, which were sharply cut and clearly defined, were then brought into apposition and sewed together. Considerable traction was first used so that there would be as little tension as possible. A cat-gut suture was then passed into the proximal trunk half an inch above the cut, and brought out in the centre of the divided end. It was next introduced into the centre of the end of the distal part of the nerve and brought out half an inch farther along.

The divided sheath of the nerve was then brought into close approximation by fine cat-gut sutures, care being taken to include only the sheath itself. The wound was closed with silk, drainage provided for, and the arm and forearm placed upon an internal angular splint with the carpus well flexed. The wound healed rapidly, though not by first intention, and the patient was discharged August 11th, to the convalescent ward. There had been no change in his symptoms except almost complete relief of pain. There was still slight pain in the top of the thumb, ulnar side.

August 29th, 1886, a little more than a year later, I examined him. There was a prominence in the anterior carpal region at point of suture. Sensation was good in all parts supplied by the median. There was no pain and had been none for months. Finally, the muscles supplied by the median alone, *adductor* and *opponens pollicis*, were well developed and responded to the man's will. In this case, therefore, the functions of the nerve were completely restored.

Case II. Stab in back of arm. Division of musculo-spiral nerve. Wrist-drop. Suture of nerve stump, suppuration, erysipelas, no improvement at end of three months. Second operation. Resection and suture. Complete and permanent recovery after four months.[2]

George Donahue, laborer, forty-three years of age. Came to the Massachusetts General Hospital, May 19th, 1885, having been stabbed by an Italian with the blade of a pair of shears. The external wound was small. The triceps was cut and the musculo-spiral nerve severed. Two small pieces of bone were clipped from the humerus. Had wrist-drop and inability to extend fingers.

Dr. Warren enlarged the cut. The ends of the nerve were found and united with six small cat-gut sutures through the sheath. The triceps was sewed up with cat-gut. Drainage-tubes were left in wound

[1] Mass. Gen. Hos. Records, p. 73, vol. 220.

[2] Mass. Gen. Hosp. Records, Vol. 220, p. 108.

and sterilized cotton dressings applied. Arm put on internal angular splint.

After the operation some sensation along course of radial nerve was noticed. One month after, bad erysipelas and prolonged and extensive suppuration of whole upper arm. July 6th, Dr. Putnam found no reaction to galvanic current. Sensation was found over dorsum of hand. Strong wire brush current caused painful sensations everywhere supplied by musculo-spiral. Muscles were soggy and skin dry and hard. Voluntary motion of ulnar and median preserved, but feeble.

Reëntered hospital August 10th, for resection of the nerve, not being able to use arm, his condition being same as when discharged. At this time the case was examined by Dr. Putnam with me, and it seemed best not to wait any longer before making another attempt, on the ground that there had not been the slightest improvement or sign of any, and that the failure of immediate union, with prolonged and extensive suppuration of the neighboring parts, rendered it extremely improbable that any improvement in his condition would ever result.

It having been decided to make a second attempt, the patient was etherized and the musculo-spiral nerve exposed by a cut about six inches in length made over the normal course of the nerve at an angle with the scar of the stab. It was found running into the dense mass of cicatricial tissue by which the former wound was healed, and from which the distal portion of the nerve was with some difficulty found emerging. The nerve was divided above and below the old wound by a clean, sharp incision, and the cicatricial tissue with the excised nerve-end was dissected out. This specimen measured an inch and a half.

After thorough stretching of the proximal end, by which the nerve was quite materially elongated, the sheath was united with seven fine silk sutures threaded upon a fine cambric needle. The joint made in this manner was quite perfect. No suture was put into the nerve itself. The external wound was closed with silk, drainage established, and the whole arm extended upon a straight splint. The most careful antiseptic precautions were taken and the wound healed immediately by first intention under Dr. Warren's sterilized cotton dressings.

No improvement of any importance was observed up to the time of his discharge except that he could use his *extensor secundi internodii pollicis*. He was discharged to report to Dr. Putnam, whose patience in his treatment was rewarded about four months later by a complete restoration of the powers of the nerve.

Ten months after the operation I saw the patient holding a piece of iron pipe weighing more than a hundred pounds, which he was putting into a deep hole he had just dug in the streets.

Case III. Ulnar nerve completely divided by glass. Healing of wound. Motor and sensory paralysis. Resection and suture of nerve stumps. Union by first intention. Case still under observation.[3]

Mary Quinn, twenty-two years, single, domestic. August 10, 1886, patient came to hospital having previously cut wrist in putting her hand through a pane of glass. The wound had entirely healed. There was loss of sensation in little and half of ring fingers, while abduction and adduction of fingers was very slight. Patient was etherized and a cut made over the ulnar nerve on the radial border of the *flexor carpi ulnaris*. This cut was at right angles to the original wound. The ends of the divided nerve were only found after a long dissection as their relations were considerably altered and the distal portion of the nerve retracted some distance. The upper portion of the nerve was stretched as much as possible before refreshing the end, but it was found extremely difficult to elongate the trunk sufficiently to make it join the peripheral portion without considerable tension.

The stumps were united by eight fine silk sutures, passed upon cambric needles through the nerve sheath. The arm was placed upon a splint and carpus kept in flexed position. Two weeks later she was sent to the Convalescent Home, the incision having healed perfectly by first intention, with no constitutional disturbances, under antiseptic dressings. She was sent to the neurologist upon her discharge from the home and is now under observation, with as yet no apparent restoration of motor-power in the nerve, and without any disturbance from neuritis or other cause.

PRIMARY SUTURE.

Case IV. Laceration of arm just above internal condyle. Ulnar and internal cutaneous nerves torn. Suture of ulnar. Union by first intention. Case under observation, symptoms as yet negative.[4]

Bartholomew Lynch, entered hospital July 8th, with left arm lacerated half an hour before admission by being caught in a flying belt. There was a ragged wound of left arm two inches above internal condyle. The wound extended from near the middle line in front around to the back of the arm, dividing the ulnar nerve, basilic vein and part of the *triceps* muscle and tendon. The wound was filled with dirt and blackened grease. After prolonged searching the stumps of the torn nerve were found. The ragged ends were carefully cut off above and below, three-fourths of an inch of nerve being thus sacrificed. Both portions of nerve were stretched with as much force as it was possible to apply, and the sheaths were united with fine silk sutures.

The *triceps* muscle and tendons were united with cat-gut sutures and the external wound closed with silk. The forearm was extended upon a straight splint, the wound having been covered with iodoform and carbolic gauze. Discharged on the 19th to report to the neurologist. No improvement noticed when last seen, and no pain or discomfort from the operation.

Case V. Cut of wrist. Ulnar nerve, *flexor carpi ulnaris*, and ulnar artery divided. Ligature of artery, suture of tendon and nerve. Immediate union, absence of local and constitutional symptoms. Case still under observation.[5]

This patient came to the hospital August 10, 1886, with a fresh cut of the wrist, ulnar side, a short distance above the joint, caused by a piece of glass. The ends of the nerve were found and united by their sheaths, fine silk sutures being used. He was sent back to the out-patient room and made a rapid recovery, the wound healing by first intention. There was absence of all constitutional and local symptoms. He was then referred to Dr. Walton who reports today, eight weeks after operation, as follows: There

[3] Mass. Gen. Hosp, Records, Vol. 224, p. 135.

[4] Mass. Gen. Hosp. Records, Vol. 226, p. 53.

[5] Mass. Gen. Hosp., Out-patient Department.

has been no improvement as yet, although the area of anæsthesia has retracted a little.

NEURECTOMY.

Case VI. Cut over middle of right thigh. Pain in scar and along course of middle cutaneous branch of anterior crural nerve. Painful cramps in calf. Dissection. Branch of nerve found to enter scar. Excision of scar eight months later, and an inch of nerve trunk. Cure.

James Prento, thirty-three years. In August, 1885, cut his right thigh with an ice hook. There was, on entrance to the hospital, April 3, 1886, a small scar on the right thigh, six inches above the knee-joint, at its middle and outer part. There was pain at this point and he was tormented by frequent and persistent cramps of the muscles of the calf. He was seen by Dr. Walton, who considered the pain and cramps probably due to the scar in which it was thought some branch of the middle or external cutaneous nerve was entangled. An operation was therefore advised for the removal of the scar and a portion of the nerve, if any should be found.

A cut was made above the scar parallel to the usual course of the nerve. A small branch of the middle cutaneous nerve was found an inch or more above the scar and followed down into it. The scar itself was then dissected out and with it an inch of the central end of the nerve.

April 26th, patient discharged, wound being healed and the pain and cramps having entirely disappeared.

Dr. Walton, to whom the case was referred after discharge from the hospital, reports as follows: The pain which existed to a greater or less extent before the operation went away. The cramps ceased. A patch of anæsthesia was found below the scar in the parts supplied by the excised branch.

Case VII. Cut on inner aspect of foot, of four years' standing. Pain in scar referred along course of internal saphenous nerve; dissection. Branch of nerve found involved in scar. Renewal of scar and portion of nerve; cure.[6]

John Sullivan, aged forty-eight, had a painful scar on the inner aspect of the left foot, from a cut four months before. Suffered a good deal of pain in the region of the scar, of a lancinating character. Referred to me by Dr. Walton. I found, on cutting down upon the probable course of a branch of the long saphenous nerve, a small filament, which, when followed, was found to enter the cicatrix. An inch of the nerve was excised, and the scar itself. A complete cessation of the pain followed immediately.

Case VIII. Neuralgia of inferior dental nerve for five years. Division of nerve inside mouth; relief for two years. Return of pain in aggravated form, lasting one year. One inch of nerve destroyed by opening inferior dental canal from outside. Immediate recovery and cure.[7]

S. P. B., seventy-two years old, entered September 3, 1886. Eight years ago, developed severe neuralgia in the right side of the face, over the lower jaw. Three years ago, inferior dental nerve was divided just above the point where it enters the dental foramen. This operation gave relief for two years, when the same trouble returned.

August 4th. One inch of the inferior dental nerve was cut out. An incision parallel to, and through the fibres of the *masseter* muscle, three inches in length, was made down to the jaw-bone. With a gouge and mallet a narrow opening, one inch long, was made through the ramus of the jaw over the dental canal. The nerve and artery thus exposed were cut at each extremity of the opening, and the whole curetted out. There was little hæmorrhage. The external wound was closed with silk, and iodoform dressings applied.

Two days later, stitches and drainage-tube were removed. For some days after the operation there was complaint of slight pain in the parts supplied by the mental branch of this nerve. This rapidly disappeared. He was discharged on the 10th.

August 25th. Came and reported that "it was a real pleasure to live; that he had had more real pleasure in life since leaving hospital than in any ten years before."

Case IX. "Epileptiform neuralgia" of side of nose and face. Neurectomy of infra-orbital nerve; complete cure.[8]

Tim O'Brien, sixty, married, laborer; entered hospital, August 8, 1885, with history of trouble in face for sixteen years. Some years ago had an operation done in an English hospital, without relief. Has pain in right side of face and nose, in parts supplied by the infra-orbital nerve. This is spasmodic, and extends from the inner canthus of eye down to the ala of the nose. During this paroxysm he leans his head upon his hands, with evidence of great pain, and the muscles of the nose contract spasmodically upon the right side, drawing up the ala and wrinkling the skin.

August 12th. Under ether, the infra-orbital nerve was found, a needle having been first inserted into the infra-orbital canal. The nerve was pulled out of the canal as far as possible, and cut. The peripheral end was then drawn up, and its branches dissected down an inch or more, and then divided.

The next day patient reported himself very comfortable, with pain much relieved. What pain still existed was referred to the ala of the nose.

August 18th. Five days after operation the pain had entirely left the face.

August 21st. No return of pain; face healed. Discharged.

NERVE-STRETCHING FOR SPASMODIC WRY NECK.

Case X. Spasmodic wry neck, probably of central origin; rapid and uncontrollable contraction of right sterno-mastoid. Constitutional treatment a failure. Head made immovable in plaster-of-Paris helmet; failure. Spinal accessory nerve exposed and stretched. Right sterno-mastoid becomes perfectly quiet, but left becomes affected; patient much improved. Spasm returned two months later to less degree.[9]

James Dutton, twenty-eight years old, weaver; April 10, 1886, entered Carney Hospital. Previous history good. Eight months before entrance noticed a slight twitching of the neck, which would appear at intervals of a week or two. Stimulants or lying down would stop the twitching. Never any trouble in swallowing; no venereal disease. The left side of the neck seemed enlarged and swollen. There was a distinct swelling behind the posterior pharyngeal wall, which looked red, and felt brawny. Two days after entrance the lump in pharynx was aspirated; no pus.

[6] Out-patient Department, September 4, 1886.
[7] Mass. Gen. Hosp. Records, Vol. 226, p. 163.
[8] Mass. Gen. Hosp. Records, Vol. 220, p. 100.
[9] Carney Hospital Records.

April 26th. Head put into stiff bandage, which kept him steady and comfortable.

June 19th. Head-gear was removed, and head found to shake as much as ever. Became despondent and suicidal.

From July 1st to August 3d, was put upon large doses of quinine, salicylate of soda, and iodide of potash without benefit.

After consultation with Dr. Bullard and the staff, and at the patient's earnest request, it was decided to try stretching of the right spinal accessory, as the twitching seemed to be mostly in the right sterno-mastoid. Operation under ether.

An incision, four inches in length, was made from the mastoid process downward and forward, along the anterior border of the sterno-mastoid muscle. The dissection was carried directly backwards toward the vertebræ, until the nerve was exposed. Continued and repeated tension was put upon it by means of hooks and the fingers. By measurement, ten pounds weight was applied. Dr. W. N. Bullard tested the nerve with the electric current after each stretching, but at no time did the sterno-mastoid and trapezius fail to respond. The wound was closed antiseptically, and the union was immediate.

The next day the twitching had entirely disappeared, and the muscle remained perfectly quiet for two months. The left sterno-mastoid, which had been perfectly quiet before, now took upon itself an action precisely similar to that which had existed in the right, but less in degree.

Examination, October 11th, shows that there is still rapid contraction of the right sterno-mastoid, though much less than before the operation. His general condition is much improved, and his discomfort is quite trifling.

The first suggestion that the ends of a divided nerve be sewn together in order that the interrupted functions of the nerve might become re-established, dates back many years. "The union of the ends of a divided nerve had already been proposed by Wilhelm von Saliceto and Guy Chauliac in the last century. Arneman mentions this subject, and as it appears was the first to study the operation experimentally. Unfortunately, according to this author's statements, his first attempts were failures, and it is highly probable that owing to this lack of success the nerve suture found for a long time after Arneman no surgical support. Up to the twentieth year of our own century but few authors had occupied themselves with this operation, and their researches were, moreover, so incomplete that they could do but little towards the further solution of the question. (Delpeich, Collisan, Lemmering and others.)

"Flourens, however, published in 1828 the results of his experiments, among which several made upon fowls were so successful that they enabled him to determine that a primary union took place between the ends of a divided nerve, and that the same occurred immediately following the application of the suture.

"Larrey at the same time found the central ends of two nerves in an amputation stump completely grown together. Surgically the operation remained for a still longer time without any application, and but a very small number of cases are to be found in the literature of the subject,[10] and they are obscurely reported and scantily described, the operators satisfying themselves with their mere mention."

The present stage of the operation began in 1864, with the work of Weir, Mitchell, Velatin, and Langier. This work has been carried on to the present time by numerous writers until the literature of the subject is very extensive. While most writers agree that the suture of divided nerves should be done, others reject entirely the operation.

The indications for nerve suture is generally considered to be when the wound is such that the divided ends do not fall naturally together. When the adjacent parts keep the distal and peripheral stumps in their normal position, and the ends are only separated by the natural retraction of the nerve itself, it is thought that the restoration follows as well as when suture is employed, and that there is less danger of neuritis and other complications.

I believe that suture should be employed in all cases where important nerves are divided, because in no recorded cases have serious local or constitutional symptoms been observed, and because it is only in this that we can hope for a primary intention. In all the cases recorded above, except Case IV, the cut has been a clean incision. Yet, in dissecting down to find the retracted ends or the cicatrix, it has been found either that the nerve ends were so placed as not to fall together or even near together, or when cicatrized that the normal nerve tissue was interrupted by a very considerable interval of dense cicatricial tissue, through which the regenerations must take place. Nevertheless, it is true that a nerve may regain its functions even when the stumps are separated a long distance and no sutures have been applied.

THE OPERATION.

In primary suture it is often difficult to find the ends of the nerve. In Cases IV and V this trouble was met with. The dissection then should be made well above and below, where the nerve preserves its normal relations. This very fact (difficulty of finding nerves) confirms my belief that the nerve ends do not readily fall together.

The ends having been found, if clean-cut they should be stretched sufficiently to make any longitudinal tension impossible,— so that when sutured the nerve will lie in the bottom of the wound, lax and tortuous. This is aided by flexion or extension of the nearest joint, as may be required.

In lacerated wounds where the ends of the nerve are torn and bruised, a clean-cut surface should be made with a sharp bistoury. The use of scissors for this purpose I do not think best because the nerve fibres are crushed between the blades instead of being cut. If it is necessary to remove a very long piece of contused nerve — an inch or more — it is better to leave the contused end rather than trust to great elongation, or to the efforts of nature to fill the gap. In Case IV so large a piece of nerve was excised for this reason that it was found extremely difficult to bring the ends into apposition, and if an unfavorable result follows it may be due to this fact.

In applying the suture the thread is either passed through the nerve itself or its sheath. Of the forty-eight cases collected by Rawa, twenty-one were of the direct variety, through the nerve itself, nine perineuritic, and the others not recorded. In eight

[10] Rawa in Kiew, Wien. Med. Wochenschrift, Vol. 35, p. 221, March, 1885.

cases of the direct, rapidly disappearing neuroses came on, and once or twice neuritis. The indirect (perineuritic) was followed in but two cases by nerve symptoms.

In Case I, both the direct and indirect method was used. In all the others the perineuritic.

This method I believe to be the better, though most surgeons incline to the direct, believing that a better and more thorough union of the stump surfaces is thus obtained.

It is for this very reason that I believe the indirect method the better. Nothing could be more perfect than the union of the stumps in my cases in the manner to be described. Though the number of sutures employed varies much with different men, the only accurate joining of the ends can be made by six or eight threads.

The material should be silk or cat-gut. Silk makes the better knot and neater joint and holds longer. The technique is as follows:

The nerve having been elongated as much as possible without injury to the stump, the ends are let fall into the bottom of the wound in the position they will naturally assume. This will give the anterior surfaces. A fine cambric needle is passed through the sheath, about one-eight of an inch from its cut edge, towards the end of the stump. It then is passed beneath the sheath of the other stump through its open end, and emerges one-eight of an inch from its edge. The knot is tied and the long ends of the thread left. The assistant takes these long ends and pulls gently away from the operator. This rotates both stumps enough for the placing of the second stitch. This in turn is pulled and the next applied. In this way the nerve can be turned enough to place the stitches into the posterior surface. The operation is completed by starting in the centre in front again and rotating the nerve in the other direction. The line of suture made in this way is as perfect as can be imagined. Its strength exceeds that of the direct method, and it may be relied upon to hold the nerve ends together until union is completed.

The prognosis is favorable in nerve suture when union by first intention takes place, though months or years may elapse before the function of the nerve is restored.

The cases of neurectomy and nerve stretching are offered as contributions to the statistics of these operations. The method used of excising the inferior dental from outside the face proved more difficult than was expected, owing to the depth of the wound, but was very satisfactory, and will doubtless be followed by a long period of rest from pain.

In finding the spinal accessory the best incision is along the anterior border of the sterno-mastoid. This should be carried down two or three inches from the mastoid process and the tissue divided carefully until the nerve is found, running obliquely outwards. Ten pounds weight was applied, and this seems to me about as much as a spinal accessory nerve of average size will safely bear.

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REPORT OF PROGRESS IN ORTHOPEDIC SURGERY.

BY E. H. BRADFORD, M.D., AND R. W. LOVETT, M.D.

LATERAL CURVATURE.[1]

THE occurrence of lateral curvature at different ages is very fully discussed by Dr. Samuel Ketch. He quotes passages from the leading orthopedists to show that the prevailing idea is that it is a disease occurring for the most part about the age of puberty, the only authors who dissent being Adams, Eulenberg, Hueter and Shaffer. He takes exception to this idea and quotes Eulenberg's cases. In 1,000 cases of lateral curvature collected by him, 87 per cent. are recorded as beginning before the tenth year, 56 per cent. of all cases occurring between the ages of seven and ten. Ketch collected the cases of lateral curvature treated at the New York Orthopedic Dispensary within the last eight years. Of 229 cases, 189 were in females. It occurred from birth to the twelfth year in 52 per cent.; from the twelfth to the eighteenth year in 41 per cent.; from the eighteenth year upward in 3½ per cent.; period of appearance not noted in 2½ per cent. The youngest case was two weeks old. He concludes first, that rotary lateral curvature is principally a disease of childhood and may be congenital or acquired; and second, that puberty, except as a concomitant occurrence has no direct causative influence.

A NEW METHOD OF APPLYING THE PLASTER JACKET IN SCOLIOSIS.

Fraenkel[2] announces a new method based upon the necessity of over-correction of the lateral curvature. He insists upon the importance of this over-correction in other deformities (club-foot, etc.), and describes how it can be applied to the spine. The child must undergo a preliminary course of treatment directed to restoring flexibility to the spine; this is done by the ordinary methods of bending the child over the knee, and com-

[1] New York Medical Record, April 24, 1886.
[2] Berl. Med. Wchsch., May 8, 1886.

mon gymnastic exercises. When a moderate degree of flexibility is restored the patient is suspended in Sayre's sling, bandage swathes are stretched over the convexity of the two curves, primary and secondary, and carried off to the opposite side. An assistant then pulls on each side, over-correcting both curves and keeping up the over-correction until the jacket is applied and has hardened. He recommends the frequent reapplication of the jacket.

Petersen [3] claims to accomplish the same thing by the use of Barwell's sling while the patient is suspended; in this way much less assistance is needed.

LATERAL CURVATURE.

Landerer considers that scoliosis is to be regarded as a deformity resulting from supericumbent weight, as genu valgum is, and that all treatment shall be based on that fact. The chief factor in determining the attitude is the muscular system. In a new-born child the spinal column is straight, if the child is made to sit up, the head and spine bends forward, and a total kyphosis is presented; if, however, the child is held sideways the spinal column with the head falls sideways and a single lateral curve involving the whole spine is presented. In a child, when it becomes necessary to hold the head erect, in a similar position a double curve S-shaped would present itself, the force causing the upper curve being the muscular system. Heavy superincumbent weight alone is not sufficient to cause a lateral curvature if the muscular system is strong enough to hold the spine in a vertical position.

The spine in beginning lateral curvature is usually quite flexible and the erect position is to be maintained chiefly by strength of the muscles. Massage, the writer claims to be a ready means of developing the muscular strength. As a new exercise the writer advises that in suitable cases the patient carry a basket upon the head for five or ten minutes daily, steadying the basket with the hand of the depressed shoulder.[4]

STATISTICS OF LATERAL CURVATURE.

Kölliker [5] has had an opportunity to observe and classify 721 cases of true lateral cuavature. Of these 577 were in females and 144 in males. He found, however, that of the severe cases alone, the numbers of the different sexes were more nearly alike, and that in the most severe cases, the number of males predominate. Simple dorsal scoliosis is the most common form (381 cases) and the next most common form is the typical S-curve (172 cases), that is, with the projection of the right shoulder and left lumbar region — the reverse double curve was only seen in 22 cases.

He found, however, that of the single curvatures the convexity was more frequently to the left than to the right. The left dorsal scoliosis appeared to be the variety most readily healed.

CLUB-FOOT.

Ried [6] contributes the histories of seven cases operated on by him for severe club-foot by resection of the tarsus. The operations were said to have been followed by satisfactory results in all cases.

In opposition to many writers he is an advocate for extirpation of the astragalus with resection of the tip of the fibula in younger persons in cases of severe club-foot, and of wedge-shaped osteotomy in older cases with much distortion of bone, presenting his reported cases as proofs in favor of his argument. Wedge-shaped resection of the tarsus he does not consider advisable in younger cases; but removal of the astragalus he advocates together with section and removal of a part of the anterior process of the calcaneus and of the posterior surface of the cuboid, even in children of two years of age. The incision for the removal of the astragalus advocated is a curved one from the outer malleolus across the projection of the astragalus to the inner edge of the extensor tendons. If any thickening of the sheath of the tendons is present it can be trimmed off so as not to interfere with the healing process.

The foot should be kept in a fixation and correction apparatus after the operation, which should be worn some time.

In opposition to the views of Ried, Wolff [7] claims that better results can be obtained by the means of forcible correction with the subsequent wearing of a fixed bandage than by any operative measures. He cites a case of a patient nineteen years of age with severe congenital deformity—(talipes equino varus) — where a cure was practically accomplished in five months. In a second case, a paralytic deformity in a patient twenty-four years of age complete correction was accomplished in five weeks. The writer claims that in all cases complete correction is possible without the use of the knife in any other way than for tenetomy of the tendo-aphillis.

In a clinical lecture Dr. A. S. Roberts [8] gives some very interesting facts about the ætiology and varieties of club-foot. In speaking of the treatment of it he directs attention to the lateral deviation of the anterior part of the foot. Taking the medio-tarsal joint as a starting point, he found that the part of the foot in front of it made an angle with the part behind it that varied much in the different conditions. In normal feet the angle varied from 26° to 37°; in valgus it averaged only about 8°, in severe cases falling as low as 5°. In varus cases, on the other hand, the angle averaged 51°, and anything over 40° Dr. Roberts considers abnormal. The treatment advocated for the correction of varus and equinus is extension by Shaffer's shoes which are slightly modified by Roberts and are quite clearly figured in the article.

The article on club-foot by A. S. Roberts and Samuel Ketch [9] in Wood's "Reference Handbook," is a most complete treatise on the subject. An analysis, as to the frequency of occurrence, of several hundred reported cases leads the authors to the following conclusions:

(1) That it is most frequently found in males.
(2) That Talipes varus predominates.
(3) That the right foot is oftenest affected.
(4) That both feet are more frequently affected than one alone.
(5) That primitive forms are rare.

A very full discussion of ætiological theories follows and Berg's theory of arrested rotation is accepted as the most likely one. The history and literature of

[3] Langenbeek's Archv., Heft. 1, Bd. 32.
[4] Deutsche Zeitschrift f. Chir., Bd. xxiii, p. 557.
[5] Centralblat f. Chirurgie, No. 21, 1886, p. 371.
[6] Deutsche Zeitschrift f. Chirurgie, 23d Bd., 5th and 6th Heft., p. 530.
[7] Berliner klin Wochenschr., 1885, Nos. 11 and 12.
[8] Philadelphia Med. News, 1886, 48, p. 309.
[9] Wood's Reference Handbook, Vol. II, p. 196.

the subject is presented in full. The treatment advocated is that which is identified with Dr. Shaffer's extension shoes, namely, strong force exerted by means of hinged-lever and screw apparatus applied daily for a few minutes at a time. The article is fully illustrated by cuts of the different varieties of the deformity and of apparatus.

Dr. Gibney,[10] in an article on "Club-Foot," discusses at length the question of tenotomy. The objections ordinarily made to it he formulates as follows: (*a*) that it weakens the foot; (*b*) that it tends to produce calcaneus; (*c*) that the cicatrices resulting from it make subsequent treatment unreliable; and (*d*) that it is a painful operation. He disposes of these objections with an answer to each one; some of the answers are, however, not very convincing. He then discusses the abuses of the operation, which have brought it into bad repute in many places. They are: (1) incompleteness of operation; (2) failure to correct or over-correct the deformity; (3) too early use of the foot in paralytic cases; (4) the use of tenotomy where there are cicatrices from old operations; (5) operation without after-treatment. If these abuses are guarded against, he advises the performance of tenotomy in most cases. The remainder of the paper is taken up with a discussion of the other methods, "rapid cures," tarsoclasis, open methods, and tarsotomy.

CLUB-FOOT.

Mr. Parker gives a brief *résumé* of the work on "Club-Foot," which was done by him, in connection with Mr. Shattuck, and reported by them to the Pathological Society. They started upon their dissections with the idea in their minds that either spasm or paralysis of the muscles was the cause of the deformity, but the deformity persisted after the muscles were dissected off, and not until certain ligaments had been divided was reduction possible. The ligaments cannot be said to be "shortened"; they are normal in structure, and give no evidence of having undergone any pathological process; they are simply shorter than normal. This is the only constant condition, but more or less inclination inward and forward of the head of the astragalus is apt to be present. The average angle of inclination in a normal foot is 38°; in talipes varus it averages 49°, reaching 64° in some cases. There is a more or less incurved condition of all the bones of the foot; the muscles of the foot and leg, the nerve-trunks, and the spinal cord are normal. The ligaments at fault are the inner ones, along the incurved side of the foot, and in severe cases, the long and short plantar ligaments. From the division of these ligaments in many suitable cases, Mr. Parker has had uniformly successful results.

Following are the rules for the division of the ligaments: For the inner one (which is the anterior part of the internal lateral ligament, described under the name of the astragalo-scaphoid capsule), a curved tenotome is entered just in front of the internal malleolus with the point toward the sole. The knife should be kept between the skin and the ligaments, and they are cut down upon with a sawing motion; the tibialis posticus and anticus muscles will naturally be cut at the same time. For the division of the plantar ligaments, long and short, the calcaneo-cuboid articulation is chosen. A knife is entered at the outer edge of this, and the line of the articulation is followed when both ligaments are divided at the same time. The operation should be wholly subcutaneous, and a plaster-of-Paris bandage applied at once, which holds the foot in its new position.[11]

[10] N. Y. Medical Journal, 1886, XLIII, 427.

FLAT-FOOT.

Humphreys[12] contributes a paper upon the "Mechanism and Pathological Condition in acquired Flat-Foot." The astragalus is the key-stone of the arch of the foot, the posterior pillar the os calcis; the anterior is formed by the scaphoid, cuneiforms, and the three inner metatarsals. The anterior pillar is, by its structure, more elastic and weaker, because it contains the astragalo-scaphoid joint. This joint, in addition to its ligaments, is strengthened by the tendons of the tibialis posticus and peronei muscles. Now, in long standing, the muscles become fatigued, fail to afford the necessary support to this joint, the ligaments stretch in time, and an extension of this astragalo-scaphoid joint takes place. In consequence of this altered relation of the pillars of the arch, the astragalus is changed in position, and, by virtue of its shape, it rotates inward, so that it falls inside of the plane of action of the tendo-achillis, and the foot is thereby weakened, and the muscles whose function it is to raise the ankle and heel on the fulcrum of the ball of the foot cannot do so. "It is a persistent over-extended and incurved condition of the chief joint of the tarsus." Moreover, the muscles on the tibial and flexor side of the foot become relaxed and enfeebled, and fail to afford the proper support, and, therefore, the extensors and peronei not being extended and used, become irritable and contracted, and add to the discomfort.

FLAT-FOOT TREATED BY OGSTON'S METHOD.

Franks and Stokes[13] report cases treated by astragaloid osteotomy. Franks performed Ogston's operation, refreshing of the astragalo-scaphoid articulation, and nailing the bones in a corrected position, and some stiffness in gait followed, perhaps on account of the fixed gypsum bandage, which was worn four months. Stokes considers Ogston's operation too severe, and prefers removing a wedge from the inner side of the neck of the astragalus, thus avoiding an anchylosis at the Chopart's articulation. The case was a successful one.

KNEE-JOINT DISEASE.

Dr. Judson[14] comes forward with a new and very simple splint for the treatment of tumor albus in children. After insisting on the importance of absolute rest in this disease, he proceeds to describe his new splint, which consists of a strip of malleable iron, about an inch wide, which runs the length of the leg and thigh in the middle line behind, being somewhat longer than the ordinary ham-splint. At the top and bottom of this, and at two equi-distant points, are riveted semi-circle steel bands, transversely bent, to fit the leg and thigh. It is, in fact, a skeleton ham-splint. It is bent to fit the outline of the leg, and secured by straps and buckles. Dr. Judson claims that a plaster or ham-splint holds the femur as if it were imbedded in a mass of jelly, and, therefore, fails to afford definite support, while in this splint the transverse steel arms approach much more nearly to the bone and therefore,

[11] British Medical Journal, 1886, II, 10.
[12] Lancet, 1886, I, 329.
[13] Trans. of the Acad. of Med. of Ireland, 1885.
[14] N. Y. Medical Journal, 1886, 43, p. 623.

holds it more firmly. The apparatus is very inexpensive, and could be made by any blacksmith.

Clutton[15] describes a

BILATERAL CHRONIC SYNOVITIS,

occurring in children from eight to fifteen years old, which affects only the knees, and is clearly syphilitic in origin. He has seen and recorded eleven cases of this sort, in all of which the condition of the patients was such that there was no doubt of the existence of constitutional syphilis. The synovitis is painless, does not give rise to muscular spasm, and the affection is extremely chronic. It does not tend to go on to destructive changes, but it is, nevertheless, not very amenable to constitutional treatment.

LOOSE CARTILAGE.

Poulet and Valliard[16] have endeavored, in a long series of pathological and experimental investigations, to learn under what conditions loose cartilages are most frequently developed. They report that a foreign bony or cartilaginous substance in the joint is developed out of bone corpuscular elements, and originate either from traumatic causes, peri-articular osteophytes, from loosened fragments of the joint cartilage of separated pieces of fragments from the ends of the joints. Dry or deforming arthritis shows the most favorable condition for the development of loose cartilage, and should be regarded as a symptom of the disease. Beside this most frequent form of dry arthritis, there is also a variety seen chiefly in youth, attacking only one joint, and only at one point of this joint. A peculiar affection of an insidious course, which is otherwise little known, exists, and is active in separating pieces of cartilage from the ends of the joints. In such cases, the resulting foreign substance is held in a depressed symmetrical spot in each of the bones, forming the joint. Every bony, foreign body may undergo changes in shape and structure, differing as the body may be free or pedunculated. The latter are inclined to a fibrous change, while the free bodies may undergo a cartilaginous change on the periphery, so that a substance originally bony may become partly cartilaginous, and further, this cartilage may proliferate.

A CASE OF OLD DISLOCATION OF THE KNEE BACKWARDS.[17]

Karewski reports a most unusual case of this rare deformity. A woman thirty-two years old, presented herself with an old deformity of the knee, resulting from a severe injury received when sixteen years of age. A complete dislocation of the knee-joint had taken place backward which from the presence and size of a scar, it was evident that the dislocation had been a compound one. The condyles of the femur were markedly prominent in front, covered by a cushion of fat on the under-joint surface. The patella is dislocated downwards. The edge of the tibia projects backwards, and in a measure the upper-joint surface can be felt.

Motion at the joint was perfect and the woman had been able to earn a livelihood as a serving-maid. Some arrest of growth of the tibia had been caused by the accident. The affected tibia was 3 cm. shorter than the other, in addition to the shortening due to the luxation. According to the history the patient had remained several months in bed after the accident and gradually learned to walk without using crutches. She complained of lateral laxity of the joint, and suffered from one attack of hydrops articuli in consequence.

(To be continued.)

[15] Lancet, 1886, I, 391.
[16] Centralblatt f. Chirurgie, September 18, 1886, p. 642.
[17] Deutsche Zeitschrift f. Chirurgie, Bd. xxxiii, p. 535.

Clinical Memorandum.

PLACENTA PRÆVIA PARTIALIS.

BY W. D. BIDWELL, A.M., M.D., OF LEAVENWORTH, KANSAS.

Mrs. P., a short, stout, healthy woman, twenty-six years old, was married two years ago last February. In July of that year she was taken with flooding after a hard day's work, which was followed by a miscarriage of a three-months' fœtus.

She became pregnant a second time about last Christmas. In May of this year she had a hæmorrhage, without pain, about equivalent to an ordinary monthly sickness. At this time she supposed she was only three months pregnant. In July she had another slight flow of about the same amount. September 7th, while stooping over, she began to flow, and lost about a quart of blood. She at once went to bed, and applying cold cloths locally, succeeded in stopping the flow. From that time she was about the house again till the 13th, when she felt languid and tired, and had to rest. At 12 o'clock, at night, without any pain or other warning, she began to flow freely, in spite of cold applications, and by the time I arrived, at 3.45, had lost some four or five quarts of blood.

Examination showed that the abdomen was nearly as large as at term, the cervix was long and soft, the os slightly patulous, and admitting the end of the finger. On the right side the uterus felt soft and boggy, while the head of the child could be felt on the left. After obtaining the above history, I informed the family that it was in all probability a case of placenta prævia. They were quite positive that the woman was only seven months pregnant, and as, in my opinion, it was advisable to deliver the woman at once, I asked Dr. Brock to see the case with me.

After consultation, it was decided to tampon the vagina, and watch the case closely. At 5 o'clock, September 15th, the pulse was 110, hæmorrhage still continued, and there were one or two uterine contractions. At 11 o'clock, it was evident to all concerned that something must be done, and the scruples of the family being at last removed, I dilated the cervix manually, and introducing the hand into the uterus, seized the right foot, rupturing the membranes at the same time, and performed version. The presence of a foreign body set up forcible contractions, and the child was soon delivered, though the rigidity of the perineum caused a moment's delay. The child, a female, was well developed, but still-born, and all attempts to resuscitate it were in vain. After the placenta was expressed by Credé's method, ergot was given in full doses every half-hour, till three doses were taken, and directions were left to give it if there was any return of the hæmorrhages. Twenty-four hours later the patient had a slight chill, though she had taken quinine immediately after delivery. Forty-eight hours later, after taking more quinine and opium, there was no return of the chill, the temperature was 99°, appetite good, and the patient feeling first-rate.

Two days later the temperature fell to normal, and the woman has made a perfect recovery, gaining strength rapidly.

Had we suspected that the child was so near full term, the method proposed by Dr. Bishop in the *Medical and Surgical Journal* of September 9th would probably have bettered the chances of the child being born alive, but taking into consideration the weakened condition of the woman and the danger from further hæmorrhage, the quick delivery by version gave the mother a better chance. Examination of the placenta showed that a surface four inches long and one and a half wide had been separated, thus exposing a considerable surface of open vessels, from which the hæmorrhage had come.

This case resembles the majority of cases of placenta prævia in the implantation, being mostly on the right side, but differs from them in that it occurred in a multipara, who had had but one miscarriage, and that some months previous to the second conception.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

E. M. BUCKINGHAM, M.D., SECRETARY.

October 11th, 1886, the President, Dr. F. W. Draper, in the Chair.

Dr. James B. Ayer reported a case of

WHOOPING-COUGH AT THE AGE OF FIFTY-ONE. TREATMENT BY CRESOLENE.

Last May, his patient, fifty-one and a half years old, father of two boys who were then afflicted with whooping-cough, was prostrated by a severe attack of bronchial catarrh, involving the whole respiratory tract down to the minute bronchi.

On the tenth day the convulsive stage began. The paroxysms, preceded by a feeling of oppression about the larynx and accompanied by nausea, were, the speaker could testify from observation, typical of whooping-cough.

The patient was convinced that he obtained great relief from the vapor of cresolene; nevertheless, the paroxysms continued daily up to the end of the twelfth week, and at the present time (twentieth week) they occur occasionally. He remembers having had an attack of the disease when eight years old. During the past few months Dr. Ayer has heard of many cases of whooping-cough among adults in this city.

Dr. J. C. Warren said that crysolene is a coal-tar preparation. It was shown here some two years ago by Mr. Andrews. It always seems in his experience to give relief.

Dr. C. P. Putnam said that he is somewhat skeptical about the value of the drug. It has appeared to do good at first, and has then failed. Possibly, because it was a novelty, he was overinclined at first to attribute to it any relief that might be observed. At any rate, he has used it many times and is entirely unable to say whether it has or has not any effect.

Dr. M. H. Richardson, speaking of the possibility just mentioned by Dr. Putnam of being deceived by improvement following the use of a drug, said that he had thought that a patient of his was receiving benefit from the dragées of Rabuteau, until it was discovered that they were being discharged undissolved through a fistula-in-ano.

Dr. M. H. Richardson then read a paper on

OPERATIONS ON NERVES.[1]

Dr. C. B. Porter said that the literature of the subject was well covered by the paper. The observations of Dr. J. J. Putnam and Dr. Walton have thrown a good deal of light on the subject of nerve suture, and by long perseverance with electricity they get good results in cases which would formerly have been considered hopeless. He had on one occasion sutured the ulnar and the median nerves in one operation, and had supposed that he had a failure, this being three or four years ago; although to-day he would persevere longer with the use of electricity. Again, to-day he would not suture both nerves at the same time, because of the impossibility of getting the greatest possible relaxation of both at once. He had in mind one case of suture of the ulnar, in which there was a return of sensation in two or three days, at least the patient said so, but no permanent improvement. He referred to cases of excision of the supra-orbital and infra-orbital for neuralgia, with relief which has lasted completely for a year; and to a case of painful stumps after amputation, in which removal of the stump of the great sciatic, small sciatic, and long-saphenous had given complete relief.

One young man had become a morphia-eater because of the painful stump after amputation of the thigh. Dr. Porter had determined to first break him of the opium habit and next to amputate the nerve stump. The patient therefore entered the Massachusetts General Hospital, but by the time that he was broken of the opium habit, his neuralgia had disappeared; it having been probably aggravated by the low condition kept up by opium eating.

Dr. S. G. Webber said that he had no surgical experience with the nerves. It seems wonderful that restoration of function should take place over considerable spaces, even a quarter of an inch. If operation cannot bring the severed ends of a nerve together, as in the case of a crush, the nerve fibres may bridge the space, and this result is, he thinks, worth trying for. Often if but one nerve be cut, although there is less motion, the injured man learns to use other muscles and so preserves good use of the limb. This is more likely to be the case with the ulnar than with the radial.

The speaker thinks that nerve stretching might be more often done for torticollis, for the symptom is a distressing one; the operation has produced good results, and even partial relief is a great blessing, while scarce anything else does good.

Dr. E. H. Bradford stated that as far as his recollection served, the reported success of the operation of stretching the spinal accessory in spasmodic torticollis was not encouraging. Some cases had been reported as cured after section of the nerve.

Dr. Bradford mentioned stretching the sciatic in a case of severe pain along the course of the nerve in a powerful adult, suffering from disease of the hip joint. Mr. McNamara had suggested and performed the operation, with the idea of temporarily paralyzing the irritated muscles and giving rest to the joint when acutely inflamed, as the sphincter ani is stretched in

[1] See page 368 of this number of the Journal.

hemorrhoids. In Dr. Bradford's case the relief was marked.

Dr. J. C. Warren said that it was of interest to inquire how long after injury an operation may be successful. He thought a case had been reported of stretching of the spinal accessory for severe torticollis in sleep, some fourteen years, he thought, after the injury, but without much success. He said also that Mr. Annandale's directions for exposing the nerve are different from those of Dr. Richardson. He makes his incision on the posterior border of the sterno-mastoid muscle on a line with the thyroid. Here the nerve is found easily in the cadaver, and there are no large vessels exposed, as he supposes would be the case in Dr. Richardson's operation.

Dr. Richardson replied that it is not necessary to expose large vessels, if the anterior border of the muscle is closely followed.

Dr. James J. Putnam spoke of the absence of danger of neuritis in operations upon nerves when done under antiseptic precautions.

The principal danger in operation for stretching seems to be that of setting-up chronic changes in the spinal cord. With regard to the strain that nerves will bear he had found that so slender a nerve as the facial would bear a strain of nearly twenty pounds before breaking. If desirable, stretching or crushing may be made as effectual as section, in interrupting the conducting power of the nerve and causing degeneration of the lower end, and it has the advantage of securing an eventual restoration of function,— where this is desirable — with greater certainty.

It is probable, as Ranvier has shown, that repair of cut nerves really takes place by a growth of fibres from the central end, and may take place so long as this remains in good condition. In the case reported by Dr. Porter, of secondary suture of the median and ulnar, the speaker had examined the excised piece, which consisted of a dense mass of connective tissue, and had found an abundance of healthy nerve-fibres in the upper end of it but none in the lower end, though a number of months had elapsed since the injury. Ranvier has shown that nerve-fibres may make their way through a certain amount of connective-tissue lying between the cut ends of nerves in certain animals, but experience seems to show that this is not true of the dense cicatrices which form after serious injury of the larger nerves in man. Speaking of complex, coördinated spasms, like torticollis, he said it was important to find and connect every underlying constitutional taint before or beside operating on the nerves.

In a severe case of torticollis observed recently, the speaker had found lead in both the drinking-water and the urine.

THE NEW YORK ACADEMY OF MEDICINE.

Stated meeting, October 7, 1886.

SOME PHASES OF CEREBRAL SYPHILIS

was the title of a paper read by Dr. Julius Althaus, of London, a Corresponding Fellow of the Academy. He first gave a historical sketch of the study of cerebral syphilis, our knowledge of which, he said, was of very recent origin, in the course of this paying special tributes to the labors of Virchow, Hübner, and Fournier. He then went on to say that the time at his disposal would only permit him to refer to two points in which comparatively little had as yet been ascertained. These were syphilitic coma and syphilitic hemiplegia.

SYPHILITIC COMA.

Coma suddenly developing in a patient who has been suffering from venereal disease more or less recently, was a thing not generally known by the profession. The other forms of coma, which he enumerated, were well recognized, but syphilitic coma was not even mentioned in the text-books, Fournier being about the only author who referred to it. Dr. Althaus, altogether, had met with eight unmistakable cases, and they were all in males, between the ages of twenty and forty. In one case the coma came on only eight months after the contraction of the primary sore; in six the period varied from three to five years; and in one it was developed after an interval (from the initial lesion) of no less than seventeen years.

Among the exciting causes of syphilitic coma, may be mentioned over-work, mental anxiety, sexual excess, and alcoholic excess. In two out of the eight cases referred to, no exciting cause could be ascertained.

In describing the symptoms, he mentioned first the premonitory, and among these were headache, confusion of ideas, and drowsiness, defective vision, with the appearance of black spots before the eyes, numbness in the limbs, and more or less loss of muscular power.

Next, he spoke of the symptoms of the initial stage. Habitually, the coma comes on during sleep, and the patient is discovered in the morning lying quietly on his face. He evidently suffers no pain, and there is no restlessness or tossing of the body. The countenance is utterly devoid of expression, and is generally pale. Sometimes the patient can be partially aroused. If so, he will complain that he is blind, and on opening the lids, it will be found that the eye-balls are deeply contracted within the orbit. There is also divergent strabismus, the degree of which depends on the intensity of the coma. The pupils are contracted, and the reflex sensibility of the conjunctiva abolished. There is relaxation of all the muscles, and the limbs on both sides are affected alike. There is more or less anæsthesia, and the tendon reflexes are either diminished or entirely abolished. There is also incontinence of the excretions, from paralysis of the sphincters. The urine dribbles away, but, as a rule, the bowels are very constipated. If they are opened by purgative medicine, however, their contents are passed involuntarily. The pulse is generally slow — 40, 50, or 60. In one case it was as low as 36, but in another it was 86. Its quality is variable. The respiration is slow and shallow, the average frequency being eight to ten a minute. The temperature is below normal (96° to 97°), and in one case was as low as 95°. In one case there was extensive herpes of the face, but, as a rule, the skin was dry and parched. The tongue is also dry, and deglutition difficult.

Such being the symptoms present, what is the condition of the brain giving rise to them? There are unmistakable signs of paralysis, but there are also signs of irritation. Such a coincidence, however, is by no means so singular as might at first appear. The brain is an exceedingly complex organ, and the gray cortex requires a larger supply of oxygenated blood than any other part. In poisoning by carbonic acid, there is first a stage of irritation, and then this is fol-

lowed by coma. In syphilitic coma there is also probably a short stage of irritation. The initial stage lasts from two to five days, when recovery begins, or the patient sinks into the final stage. In ten days or a fortnight he may apparently be well, and may be able to resume his usual occupations. In other cases, however, recovery is more gradual.

FINAL STAGE.

If the progress of the case is towards a fatal termination, there is an intensification of the symptoms of loss of voluntary muscular power and reflex sensibility. The lower jaw drops, and the mouth lies wide open. The breath is fetid, and the power of swallowing is lost. The surface of the body is bathed in a clammy sweat, and the pulse is small, full, and very quick. It rises to 180, and later, it is impossible to count it. The sphygmographic tracing is that of a patient in collapse. The respiration grows more and more rapid, and may be of the Cheyne-Stokes character. Hypostatic pneumonia is also likely to result. This stage lasts from twenty-four to thirty-six hours.

Of the eight cases seen by Dr. Althaus, six ended in recovery and two in death, in the first attack. In three of the six which recovered from the first attack, there was a relapse. One of the patients recently died, after having had no less than five attacks of syphilitic coma. No autopsies, unfortunately, were permitted in the cases which proved fatal.

Dr. Althaus expressed the opinion that this affection is due to implication of an important cerebral artery, and in all probability the basilar, which supplies the most important vital parts of the brain. Sudden occlusion of this artery causes death by profound coma, as has been proved by a number of instances. He described a case in one of the London hospitals, in which the autopsy showed that there was an occlusion of the artery, due to inflammatory action, and also referred to similar instances reported by Vulpian, Bastian, and other authorities. By occlusion of the basilar artery, sudden anæmia of the cardiac and respiratory centres is caused, but in syphilitic occlusion the case is usually of longer duration than in ordinary thrombosis. This explanation of the pathology of syphilitic coma, Dr. Althaus remarked, is still in need of confirmation by post-mortem observation.

The diagnosis, he went on to say, is easy or difficult, according to circumstances. Apoplexy usually occurs in the old, while syphilitic coma is seen in the prime of life, and apoplexy is attended with hemiplegia, which is lacking in the latter. The variety of apoplexy which it most resembles is that in which the hæmorrhage takes place into the pons. It may be mistaken for opium poisoning, but in syphilitic coma the pupils are not so extremely contracted as in other opium poisoning or hæmorrhage into the pons. If itching of the skin and retention of urine are also present, it will indicate opium poisoning. The fits in epilepsy, hystero-epilepsy, etc., are of much shorter duration than an attack of syphilitic coma, and are also apt to be accompanied by biting of the tongue, foaming at the mouth, and perhaps petechiæ of the face. In suspected alcoholic coma, the odor of the breath is not a reliable sign, as alcoholic stimulus may have been administered at the onset of an attack of coma due to other causes; but if the urine is found to contain alcohol, the diagnosis will be plain, since this agent, if taken in large quantities, is eliminated unchanged in the urine. The temperature is usually lowered in alcoholic coma, but not to as marked an extent as in syphilitic coma.

The detection of uræmic coma is easy if the history of the case is known. It may come on suddenly, but it is usually preceded by headache and nausea. It is characterized by fits and remissions; not the dead level of unconsciousness which is met with in syphilitic coma. Anasarca is often present, and the examination of the urine will reveal the presence of disease of the kidneys. By raising a blister and examining the serum which it contains, the presence of urea can also be detected in the blood. One half of the cases of diabetes terminate in coma, and therefore the condition of diabetic coma, or acetonæmia, is not infrequently met with. The peculiar difficulty ot respiration and the acetone breath are important factors in the detection of diabetic coma, and the urine will also usually be found to contain acetone and its allies.

As to the prognosis, this is always grave, although not so hopeless as is the case of either uræmic or diabetic coma. It is serious, however, because the presence of this condition shows that the syphilitic disease has invaded the cerebral centres. Even if the patient recovers from the immediate attack, there is always danger of a return of the trouble. The prognosis of the attack itself is usually hopeful; but active treatment is required, and the future prognosis also depends to a large extent on this. If the patient is willing to submit to a two years' course of systematic treatment, he will probably have a fair chance of recovery; but if he will not carry out its details thoroughly, the alternative is death or general paresis. The two fatal cases which Dr. Althaus met with were hopeless when he first saw them, as they were far advanced, and had been treated simply with stimulus.

In speaking of the treatment he said that ether by hypodermic injection was often of great service; the usual dose being twenty minims three or four times a day. Ammonia is of little value, but blistering sometimes has a good effect; while the cold douche, applications of ice, etc., are likely to do more harm than good. The great reliance must be specific treatment, and the best method of employing it so by means of inunctions. There is perhaps nothing so good for this purpose as the old blue ointment; though the oleate of mercury, made with the yellow oxide, is excellent too. Lanolin can also be used with good effect as a vehicle for the mercury. For hypodermic use the perchloride is the best preparation, and the injections should be made deep into the gluteal muscles in order to avoid as much as possible the danger of abscesses.

Dr. Althaus then took up the subject of

SYPHILITIC HEMIPLEGIA,

of which he said there was a number of different types, although they all have certain points in common. In the first place, syphilitic hemiplegia almost invariably occurs in males (ninety-five per cent. of all cases); secondly it occurs in the young, (between the ages of eighteen and forty); and, third, it is characterized by the peculiar behavior of the deep reflex phenomena. The complication of hemiplegia with ocular paralysis of different kinds is very significant of syphilitic disease. He related a case in which the patient, twenty-eight years of age, had incomplete paralysis of the left side, which had been incomplete from the begin-

ning, and which was preceded by ptosis. There was no apoplectic seizure at the time of the onset of the trouble.

Another type was preceded by headache of peculiar obstinacy, which disappeared, however, when the hemiplegia set in. In another variety both sides are affected, but at different times. In some cases many months intervene before the hemiplegia occurs on the second side. In still another variety the paralysis comes on, not more or less rapidly, but slowly. In one case which he related, hemiplegia developed within eight months after the initial lesion of syphilis. The patient was systematically treated, and made a fair recovery.

These different types were all totally different from ordinary hemiplegia. All cases of the latter were very much alike; but scarcely any two cases of syphilitic hemiplegia resembled each other. The diagnosis of this affection by the test of treatment was often very fallacious, for many cases of syphilitic hemiplegia were not materially benefited by specific treatment. There was, however, one truly pathognomonic symptom, namely an excessive exaggeration of the deep tendon reflexes, both of the upper and lower extremities. This was the symptom on which Dr. Althaus depended in making the diagnosis. It could only be relied upon, however, in cases in which the reflexes on one side were normal.

The treatment was not always satisfactory, and therefore in such cases the prognosis was not good. Some cases unfortunately terminated in general paralysis of the insane. It was the secondary consequences of the syphilitic process which often proved unamenable to treatment; for the removal of the syphilitic gumma would not restore the nerve-cells and fibres which had already been destroyed. The lesson to be derived from these cases was, therefore, that active treatment should be commenced as soon as there is the slightest evidence of cerebral trouble. The secondary ordinary lesions which result from syphilitic lesions of the brain are unfortunately not affected by anti-syphilitic treatment.

DISCUSSION.

Dr. R. W. Amidon said that he would like to call attention to one factor in the production of syphilitic coma which the learned author of the paper had not specifically alluded to, namely, the factor of a weak heart. Dr. Althaus, he felt sure, however, would be willing to acknowledge its agency, since he had mentioned among the exciting causes over-exertion, anxiety, and sexual and alcoholic excesses; all of which conditions were recognized as conducing to a weak heart. He thought that this important factor did not receive sufficient attention from the profession.

The occluding disease of arteries was well understood, but alone, he did not think it was sufficient to account for the coma. Taken in connection with a weak heart, however, it would satisfactorily account for all the phenomena so graphically described in this paper.

Dr. A. D. Rockwell remarked that as our experience in the domain of nervous diseases widens, we must necessarily become more and more impressed with the importance of syphilis in this connection. Patients often state, with honest conviction, that they have never had syphilitic trouble, and yet the subsequent history of their cases proves conclusively that they have. He said he had had no personal experience with syphilitic coma, but he thought that perhaps a case which he had had under his care some time ago might prove of interest in connection with the subject of the paper. It was one of spastic paresis, with some difficulty of utterance. From the beginning there had been facial paralysis. This had been followed by aphasia and hemiplegia, which afterwards disappeared, and then reappeared again. The patient denied that he had ever had syphilis, but a course of anti-syphilitic treatment resulted in very marked benefit.

Dr. Robert W. Taylor said that he was in hearty accord with the author of the paper in much that he had said, but he thought that he had scarcely done full justice to certain observers in the historical part of it. It was true that two great pathological epochs in connection with syphilis were inaugurated by Virchow and Hübner, but these were outshone, he believed, by certain clinical epochs. The Strasbourg thesis of Hildebrand showed that about 1848 and 1850, there was some professor at that university who had taught a knowledge of cerebral syphilis. The next epoch commenced about 1863, with the writings of Lancereaux and other brilliant French syphilographers, and these were the text-books from which a vast amount of our knowledge had been derived. Without detracting from the labors of Hübner, he thought that a word of recognition was due to the late Walter Moxon, of London, for his remarkable contributions on syphilitic disease of the arteries, published in "Guy's Hospital Reports."

Dr. Althaus's description of syphilitic coma was clear, graphic, and admirable in every way, and it was evidently the result of careful bedside study. As regards syphilitic hemiplegia, Drs. Van Buren and Keyes, in this country, had studied the subject very thoroughly, and all the varieties and symptoms described by Dr. Althaus had been noted in the paper which Dr. Keyes read a number of years ago, embodying their researches, the main points of which had now been incorporated in several text-books. He believed that certain concomitants, besides syphilis, were necessary to produce these severe neuroses, and among them he would rank as of great importance alcoholic and sexual excesses, and unnatural sexual habits.

Dr. Landen Carter Gray, of Brooklyn, said that some of the questions brought up by the author of the paper, he thought, ought to receive a little discussion. The pathology of these cases of syphilitic coma was a subject which still deserved a great deal of study, and personally, he was hardly prepared to accept Dr. Althaus's conclusions. The textural changes which took place in the brain itself were out of all proportion to the arterial changes, as was shown in two autopsies which he had had the opportunity of seeing, in cases where the coma was the predominant symptom before death, the paralysis present being secondary. In both cases, the presence of arterial disease was evident not only to microscopic inspection, but also to the naked eye. Yet this, so far as he was able to judge, was not sufficient to account for the symptoms noted during life. In one of the cases there were enormous textural changes, including softening, amounting to pulpiness, with lepto-meningitis and syphilitic neoplasms. The mere theory of some occlusion of the basilar artery, he thought, was not enough to account for the coma. Again, if the coma were very profound, it might be impossible to say whether any paralysis were present or not.

As to the matter of treatment, he was somewhat surprised to hear the views expressed in the paper. Dr. Althaus apparently depended entirely on mercurials, and had little or nothing to say in regard to iodide of potassium. As for his part, he had some time since given up the use of mercury entirely in these cases, as he had never seen any beneficial results from it. He had had indubitable evidence, in his experience, of the superior value of the iodide, and he believed that this was the experience also of the great majority of neurologists in this country.

Dr. L. Putzel said that he was glad that the question of therapeutics had been taken up, and stated that he agreed entirely with the author of the paper in regard to the superiority of mercury. It was now about six years since he had become convinced that syphilis did not yield, or at least, but slowly, to iodide of potassium. Formerly, he employed the bichloride of mercury, but more recently he had found much better results from the use of inunction. It was his custom to employ this until the teeth began to be touched, and then discontinue it. In connection with this, small doses of iodide of potassium sometimes seemed of service.

As to occlusion of the basilar artery, which Dr. Althaus would assign as the direct cause of syphilitic coma, it seemed to him that we were likely to have a number of vessels injured, but not sufficiently to cause occlusion. The blood-supply would be diminished, but this would not be sufficient to cause total occlusion until the end.

Recent Literature.

Rheumatism, its Nature, its Pathology, and its Successful Treatment. By T. J. Maclagan, M.D. New York: Wm. Wood & Co. 1886.

This volume, which constitutes the September issue for the present year of "Wood's Library of Standard Medical Authors," is a reprint of the English edition, which has already received favorable notice in these columns. Its publication as one of the series referred to will be gratifying and profitable to the subscribers.

Diagnosis of Diseases of the Brain and of the Spinal Cord. By W. R. Gowers, M.D., F.R.C.P., Assist. Prof. of Clin. Med. in Univ. Coll., Phys. to Univ. Coll. Hosp., and to the Nat. Hosp., for the Paralyzed and Epileptic. New York: William Wood & Co. 1885.

This most valuable work comprises the lectures of the author on the diagnosis of diseases of the brain and spinal cord. The student or practitioner who studies it carefully, will be amply repaid by the clear ideas which he will attain regarding locality and nature of lesions affecting the central nervous system, and the methods of analyzing cases of nervous disease. The book is not a systematic treatise on the various lesions affecting the brain and cord, the sections on the pathology being rather intended to teach methods of diagnosis than to describe exhaustively the diseases diagnosticated. The student will acquire a practical knowledge, however, of the principal disorders with which he will have to deal in his practice. It is needless to call attention to separate parts of the work, as all are excellent, carefully prepared, and presented in a clear, concise, and attractive style. The book contains about three hundred pages.

A Guide to the Examination of the Nose. By E. Cresswell Baber, M.B., London. Surgeon to the Brighton and Sussex Throat and Ear Dispensary. With illustrations. New York: J. H. Vail & Co., 21 Astor Place. 1886.

This book has been carefully prepared, and it can be recommended as a reliable guide to the examination of the parts of which it treats. The author has wisely drawn largely from Zuckerkandl's classic work, which gives peculiar value to the chapter on the anatomy of the nose. Attention is called to some important anatomical points which have not been sufficiently insisted upon, and familiar details are rapidly passed over. Considerable prominence is given to the tubercle of the septum, an accumulation of glandular elements forming a distinct eminence on either side of the septum in its superior region, and which Mr. Baber is inclined to think guards and protects the anterior extremity of the olfactory slit in the same manner that the anterior end of the inferior turbinated bone, especially when erected, guards the respiratory region.

The chapters on anterior and posterior rhinoscopy describe clearly and in detail the different instruments and methods necessary to examine the nasal cavities. The book is profusely illustrated, and contains many original drawings by the author.

Dictionary of Practical Surgery by various British Hospital Surgeons. Edited by Christopher Heath, F.R.C.S., Holme Professor of Clinical Surgery in University College, London; and Surgeon to University College Hospital. Philadelphia: J. B. Lippincott & Co. 1886. 2 vols. in 1, 8vo., pp. vi, 970 and 884.

The dictionary is intended to fill a want in the library of the busy practitioner by supplying immediate information as to diagnosis and treatment in cases of surgical disease or injury. The aim of the editor has been to produce a compendium of the British practice of surgery at the present day, and he considers that the object has been fairly accomplished, as only two years have elapsed between the planning and completion of the dictionary. In the general plan of the book the different surgical affections are described in comparatively short articles under their proper names, in alphabetical order, or when it has been found more convenient to group together a series of diseases of one organ, cross references have been given.

The value of such a dictionary must depend very largely upon the character of the writers of the different articles, and the list contains the names of a very large number of men who are widely known in connection with the subjects upon which they have written.

Abdominal Aneurism is treated by William Murray, Abdominal Hernia by Frederic Treves, Abdominal Tumors by J. Knowlsey Thornton, The various Syphilitic Affections by Jonathan Hutchinson; Robert Liveing has written many of the Dermatological Articles, and Berkeley Hill that on Stricture of the Urethra; Tumors of the Bladder are treated by Sir Henry Thompson, Lithotomy and Lithotrity by William Cadge; William Watson Cheyne writes on Antiseptics, Dr. Cruise, of Dublin, on the Endoscope; Mr. Gamgee on various subjects connected with the treatment of wounds.

Other writers are Sir William MacCormac, William

Maccuen, Stephen MacKenzie, Howard Marsh, Sir James Paget, Bilton Pollard, C. Mansell Moullin, T. Pickering Pick, Victor Horsley, Charters J. Symonds, Bernard Pitts, Dyce Duckworth, Alban Doran, Percy Kidd, and many others whose names are a guarantee for the excellence of their papers.

One of the great advantages of such a book is the readiness with which one gains information in regard to unusual and obsolete terms, and some interesting articles are to be found, as that by Mr. Chetton on Fragilitas Ossium, and those on Riders bone, Dugas' test, and others too numerous to mention: the book contains also a description of a large number of splints and operations that are known by the names of their inventors, but the book shows that it is what it claims to be, a compendium of British Surgery, by the omission of some important American names, as Physic's splint.

The book covers the entire domain of surgery and many kindred subjects, and we can imagine might be especially useful to any one who does not pretend to maintain an accurate acquaintance with all the wide field, but is still constantly liable to meet, in reading and conversation, with terms newly come into use.

The writer of this notice must confess to have opened this book with a feeling that dictionaries were becoming too frequent, but a very little time spent in reading the articles that interested him, has served to impress him with the fact that a great deal of time and care has been spent in its preparation, and that it is well worthy of the place beside Quain's Dictionary of Medicine, which it was intended to fill.

A Treatise on the Diseases of the Nervous System. By WILLIAM A. HAMMOND, M.D. Eighth edition, 8vo., 945 pp. New York: D. Appleton & Co. 1886.

This edition has been "revised thoroughly," but it does not differ materially from the preceding edition except in the addition of a section on "Certain Obcure Diseases of the Nervous System." This section consists of chapters on tetany, Thomsen's disease, and the curious disturbance known as miryachit, with its kindred affections. The first two chapters are exceedingly defective. No mention is made of the peculiar position of the fingers in the spasm of tetany, nor of Trousseau's symptom — the aggravation of the spasm by pressure on the nerve trunks. The electrical reactions in the two diseases, so fully described by Erb, are also neglected. The chapter on miryachit is curious and entertaining. The revisions of later editions, however, have failed to make the book an exponent of recent knowledge. Its value to the specialist and the general practitioner is apparent when we state that there is no discussion of tendon reflex or reaction of degeneration, no chapter on multiple neuritis, and no description of the different forms of peripheral paralysis; and, furthermore, that under aphasia no mention is made of Kussmaul's investigations or of word-deafness; under amyotrophic lateral sclerosis no mention is made of exaggeration of the reflexes; under infantile paralysis no mention is made of qualitative changes in electrical excitability; and under locomotor ataxia no mention is made of reflex immobility of the pupils to light. Yet this book "has continued to receive approval, at home and abroad, to an extent beyond that ever given to any other work of like scope and objects, published in any part of the world"!

Medical and Surgical Journal.

THURSDAY, OCTOBER 21, 1886.

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CUPPLES, UPHAM & COMPANY,
283 WASHINGTON STREET, BOSTON, MASS.

THE FORTY-FOURTH MASSACHUSETTS REGISTRATION REPORT.[1]

THE population of Massachusetts, by the State Census of 1885, was 1,942,141, of whom 932,884 were males and 1,009,257 were females. The population of the State increased 30.37 per cent. from 1865 to 1875 and 17.57 per cent. from 1875 to 1885.

The birth-rate in 1885 was 25.12 per 1,000 of the population; the death-rate 19.61. Since 1860 the excess of birth-rates over death-rates, calculated by periods of five years, has gradually diminished so as to be now about one-half what it was twenty-five years ago.

There were 50,379 births during the year, including 1,589 still-born. The rate of living births (48,790) to the population is nearly the same as that of France, as is the average for the last twenty years, but much less than in England, Denmark, Sweden, Austria, Netherlands, Hungary, Switzerland, Italy, Spain and Germany. In the twenty-three cities in Massachusetts the birth-rate in 1885 was 27.59; in the rest of the State 21.97. There were 903 illegitimate births.

The marriage-rate was 8.78 (17.56 persons married to each 1,000 of the population) or 1.5 lower than the average of the past twenty years. The approximate average age at marriage was of men 28.05 years; of women 25.30. There were 646 divorces granted during the year, 214 to men and 432 to women.

The deaths, 38,094, were 1,104 more than the previous year, making a death-rate of 19.61, as compared with 19.80 for the period of five years, and 19.44 for the thirty years, ending in 1885. In the twenty-three cities, with a population of 1,087,496, the death-rate was 21.2; in the rest of the State 17.6. For the four quarters of the year the percentages of all deaths were, beginning with the first 24.4; 23.0; 29.1; 23.5.

[1] Forty-Fourth Report to the Legislature of Massachusetts relating to the Registry and Return of Births, Marriages and Deaths in the Commonwealth, for the Year ending December 31, 1885. Together with the Reports relating to the Returns of Libels for Divorce and to the Returns of Deaths investigated by the Medical Examiners. For the Year 1885. Prepared by the Secretary of the Commonwealth. With Editorial Remarks by Frank Wells, M.D.

The death-rate of males was 20.2; of females 19.0. Thirty-one + (31.41) per cent. of the deaths were of children under five years of age; 20.03 of infants under one year. The death-rates at the several ages were, under 1, 212.49; under 5, 67.00; 5 to 10, 7.46; 10 to 15, 3.77; 15 to 20, 6.35; 20 to 30, 9.08; 30 to 40, 10.62; 40 to 50, 12.96; 50 to 60, 19.71; 60 to 70, 36.19; 70 to 80, 76.16; 80 and over, 182.32.

The percentage of deaths from the "zymotic" diseases was 4.6 less than the average of the past ten years and less than in any one of the ten; from constitutional diseases, .5 less than the average, but from "local" diseases 5.5 above the mean for ten years. The relative prevalence of the prominent "zymotic" diseases is as follows:

Years.	Diseases.									
	Dysentery.	Typhoid Fever.	Whooping Cough.	Croup.	Diphtheria.	Measles.	Scarlatina.	Cholera Infantum.	Small-pox.	Total.
1876,	417	881	192	684	2,610	47	1,222	2,087	31	8,171
1877,	580	814	369	544	2,634	135	467	1,827	26	7,496
1878,	602	679	400	583	1,934	305	404	1,573	2	6,482
1879,	372	637	302	559	1,734	19	850	1,349	8	5,830
1880,	395	882	230	625	1,769	236	574	2,118	38	6,867
1881,	360	1,072	217	677	1,706	230	397	1,861	47	6,567
1882,	398	1,079	265	491	1,280	68	318	2,159	45	6,103
1883,	336	860	137	530	1,091	321	575	1,941	5	5,796
1884,	254	875	410	562	1,084	75	627	2,081	3	5,971
1885,	253	768	184	520	1,003	313	587	1,852	19	5,499

Of constitutional diseases, pulmonary consumption caused 5,955 deaths in 1885, as compared with 5,798 in 1884, 5,931 in 1883, 5,865 in 1882, 5,886 in 1881, and 5,494 in 1880. From cancer, the number of deaths was 1,087 in the past year, as against 1,060 1,027, 987, 949, 982, 862, 807, 647, 657 and 593 in the previous ten years.

Of "local" diseases, apoplexy, paralysis, insanity and convulsions, have steadily advanced in fatality since 1876 — the number of deaths from these diseases, in 1885, having been respectively, 294, 151, 40 and 60 greater than the average for ten years. From pneumonia, the number of deaths exceeded those for 1884 by 822, and the average for ten years by 731; from bronchitis, 192 more deaths took place than in the previous year; from pleurisy the mortality was 73 greater than in 1884. Heart diseases and Bright's disease were more fatal than usual.

For the ten years previous to 1885, there was a very uniform yearly decrease in the mortality from childbirth. The past year, however, exhibits a sudden increase in the number of deaths from this cause — 83 more than in 1884.

The following very striking table, even after due allowance for greater accuracy in statistics of late years, shows an extraordinary result of the strain of modern life, as well as of improved sanitation, by virtue of which there is a lessened mortality from infection-diseases, which prevail in early or middle life, and a correspondingly increased death-roll from the diseases which belong to middle and late life.

	Death-Rates.					
	1860.	1865.	1870.	1875.	1880.	1885.
Mortality-rates per 10,000 from Apoplexy. . .	1·93	2·08	2·70	2·78	4·19	5·12
Softening of the Brain .	·36	·33	·58	·59	·68	·65
Paralysis	3·26	3·78	4·32	5·43	5·23	5·82
Insanity.	·58	·59	·71	·71	·71	·96
Cephalitis and Brain Disorders	5·93	7·61	6·04	6·91	6·19	7·46
Totals, ...	12·06	14·39	14·95	16·42	17·00	20·05

At the end of the report are two tables of statistics, giving a compilation of the work done by the medical examiners of Massachusetts during the year 1885, based upon returns made by the examiners, in accordance with the requirements of a law enacted in 1884 — clearly the work of clerks skilled in making statistical exhibits. It was hoped that these records, collated, edited and published, would stimulate medical examiners to the performance of the best work possible, and would incidentally afford valuable and useful material for medico-legal study. The tables alone show inadequately the results of the work done by the medical examiners and their manner of doing it. We trust that the next Registration Report will contain an elaborate analysis and editorial comments on these tables and bring out their full value.

The report, in general, is a creditable one to the editor, but there are many ways in which it may be improved, and we have always taken the ground that the editing of the vital statistics of the Commonwealth should be in the hands of the State Board of Health, where it was at the time of the death of the former board. The medical profession would then have great cause for congratulation in the matter, with so painstaking a statistician as Dr. Abbott and such accomplished sanitarians as Dr. Walcott and Dr. Draper, and all the resources of their office, to supplement the work of the Secretary of State, who already deserves the thanks of all interested in public health for the ability and zeal with which he has yearly improved his part of the work, namely, the collection and compilation of the statistical returns.

TUBERCULOSIS OF THE THYROID GLAND.

Virchow formerly held this affection as a very rare one, and as extending from the neighboring lymph-glands. Subsequently, Cohnheim regarded it as a constant accompaniment of the acute general form, while Chiari has found it in the course of chronic disease, and holds the tubercles to originate from the interstitial tissue, rather than from the midst of the alveolar epithelium.

E. Frankel[1] has more lately made observations on six cases occurring in fifty cases of phthisis, out of three hundred and seventy autopsies. His results

[1] E. Frankel. Virchow's Archiv., Vol 104, p. 58.

agree in the main with the two authors last mentioned. First, as to the gross appearances. There is no doubt that the miliary is the most common form. In the extent of the disease, there are great variations; at times the whole gland is equally involved, at times one lobe only is the seat of trouble. In the marked cases, after the surrounding soft parts have been removed, grayish-white nodules can be seen shining through the proper capsule, and, on section, stand out in the same way from the midst of the tissue in which they lie. In other respects, as a rule, the organ presents no other variation, nor is it increased in size. Virchow has reported a case with cheesy and softened nodules, and Frankel has met with another.

It was hoped to settle the question as to which of the elements of the thyroid could be looked upon as the point from which the tubercle took its departure. The tendency to early cheesy degeneration of these growths throws difficulties in the way, but from a large series of microscopic preparations, it was evident that their origin is in the soft interstitial tissue separating the follicles. This is quickly broken through by abundant round cells, which are at first still separable from the lining epithelial cells. They soon mingle with these and with the other contents, until the different elements can no longer be distinguished by aid of the microscope. At times this tuberculous infiltration seems to act by compressing the follicles until their opposite walls come in contact. In this or that way, the normal structure of the gland disappears, and thus appear accumulations of round cells, undergoing more or less marked retrograde changes, and among which are found typical giant cells.

This observer is the first to demonstrate the presence of tubercle bacilli in the thyroid. Of his six cases, they were present in five. In one case only, however, were they present in great numbers; in the others, they were to be seen only here and there. His observations go to prove the correctness of Weigert's theory [2] in regard to the formation of giant-cells, namely, that where the bacilli are in small numbers, numerous giant-cells are found.

MEDICAL NOTES.

— The Noble County (Ind.) Medical Society receives $500.00 a year for caring for all the sick paupers in the county. The member nearest the pauper treats the same. The money is used for building up a society library.

— The *Medical Age* is responsible for the following: A gentleman received a note from his lawyer, which he was unable to decipher. On his way to his office, he met a friend at the door of a drug store. The friend, after vainly attempting to read the note, suggested that they step inside and hand it to the druggist, without comment. The druggist, after studying it in silence for a few minutes, stepped behind his prescription case, and in a short time returned with a bottle of medicine, duly labelled, and bearing directions. When the gentleman saw his lawyer, he was informed that the note was a notice for him to call at his office between 3 and 4, P. M., of the following day.

— Somebody, we believe it is Miss Kate Field, tells a story illustrative of one of the embarrassments attending cremation, to the following effect: A lady making a visit upon friends, found, to her great annoyance, that she had neglected to bring with her any tooth-powder — an article upon which she was very dependent for her comfort. Looking about her bedchamber, her eye fell upon a small, beautifully-wrought vase or jar. Removing the cover, she found it to contain a grayish, calcareous powder, which, to her mind, was evidently designed for use as a dentifrice. She did not hesitate to avail herself of the lucky discovery, the use of which proved most satisfactory. The next day she apologized to her hostess for having made free with the toilet appliances of the room, and at the same time remarking that the article she had found was much more effective for its purpose than anything she had hitherto used, desired to know where it could be obtained. The countenances of the family assumed an expression, at first, of bewilderment, which deepened into one of consternation as one of the daughters gasped forth, "Why, that's aunty!"

NEW YORK.

— Dr. Fordyce Barker gave a large reception at his residence, on the 15th of October, to Professor Winckel, of Munich, and the members of the New York Obstetrical Society.

— The widow of the late Mr. Woerishoffer, the banker, has given the sum of one hundred thousand dollars to different scientific and charitable objects, as a memorial of her husband, and it has just been announced that twenty-five thousand of this amount is to be presented to the New York Academy of Medicine, through the President, Dr. A. Jacobi.

— The opening and dedication of a new German hospital — the Lodge and Association Hospital — took place October 10th. It was the result of the organization not long since of a society entitled the Aid Society of the Lodge and Association Hospital, by the representatives of a number of German lodges and societies, for the purpose of raising a fund for the fitting up and maintenance of a hospital for the benefit of sick members of the various bodies to which they belonged. A suitable building was rented on St. Mark's Place, and about $3,000 expended in arranging it for the purpose designed. It has accommodations for about forty patients, and is to be under the direction of Dr. Emil Neumer, physician-in-chief. There will be fourteen sub-physicians, and members of participating lodges and societies will be admitted under all circumstances, except when suffering from contagious diseases. The patients will all have the privilege of selecting their own physicians, and may remain in the hospital as long as one year, if necessary. The Secretary has issued a

[2] Boston Medical and Surgical Journal, Vol. 113, p. 465.

circular requesting associations and societies of every kind to participate in the enterprise, and stating that the annual dues have been fixed at a minimum of $15, payable in advance, any society contributing receiving the benefits of the institution from the day the dues are paid.

Miscellany.

OLEUM EUCALYPTI IN MALARIAL AFFECTIONS.

Dr. Musser, of Philadelphia, records in the *Therapeutic Gazette*, June, 1886, a series of experiments with this oil in the treatment of various forms of malarial fever. He gives ten drops on a lump of sugar three or four times daily to adults, but states that three or five drops repeated oftener would be of more service. He says, "The oil of eucalyptus is of material value in malarial affections, and in cases where quinine is, on account of idiosyncrasy, inadmissible, the drug may be relied on in nearly one-third of all the cases of vague malarial intermittent affections." He concludes thus: — "1. That the oil of eucalyptus is of decided value in about thirty-three and one-third per cent. in all cases of intermitting malarial fever. 2. That it has no specific value in any one type of the disease. 3. That the longer the duration of the disease the less liable is it to do good. 4. That relapses are not prevented by it. 5. That its influence on the spleen has not been demonstrated. 6. That a dose of ten drops four times daily has been a sufficient dose, but that five drops every three hours would be of greater value possibly. 7. That good results are not attained as quickly as by large doses of quinine, but that a good effect should be observed within five days at least."

DR. CHARLES DUDLEY HOMANS.

At a meeting of the Obstetrical Society of Boston, held October 9, 1886, the President said:

"It becomes my sad duty to remind you at this meeting that Dr. Charles Dudley Homans, an original and valued member of this Society, died at Mt. Desert, his summer residence, on the second day of September last. We shall greatly miss his genial presence and manly bearing. Our profession has lost in him an honorable and straightforward member, one whose high sense of honor and sound judgment made him a valued friend and adviser. These characteristics of our departed associate were ever apparent, and attracted all men to him.

"I need not remind you of the many offices of responsibility which he held during his useful and unostentatious life. He loved his profession and was jealous of its purity. He was always a source of strength in this Society and filled at one time and another nearly all its offices.

"'Life's race well run,
Life's work well done,
Life's crown well won,
Now comes rest.'"

The President then appointed Drs. William Ingalls, W. W. Wellington, and C. Ellery Stedman a committee to draft a suitable minute for the records. The committee reported as follows:

"On the second day of September last this Society lost by death one of its original and most valued members, Charles Dudley Homans. His grand characteristic was loyalty: his duties at the hospital were never slighted: Societies, patients, friends, always knew where to find him. He had a clear and quick perception of statements, and was ready with wise advice, and truthfulness governed his speech. He was a good scholar, and had a tenacious memory: his disposition was cheerful.

"The Society desires to record this memento as an affectionate tribute to his memory."

The minute was unanimously accepted.

Charles M. Green, *Recording Secretary.*

BOSTON DISPENSARY.

The statistics of this institution for the year ending September 30, 1886, are as follows:

The number of new patients treated at the central office is 18,506, classified as follows: —

Medical Department.— Men, 2,453; women, 4,555; children, 2,188; total, 9,196.

Surgical Department.— men, 1,370; women, 656; children, 683; total, 2,709.

Skin Department.— Men, 534; women, 336; children, 312; total, 1,182.

Department for Diseases of the Nervous System.— Men, 339; women, 235; children, 51; total, 625.

Department for Diseases of Women. — Women, 426.

Department for Diseases of the Throat and Nose. — Men, 457; women, 562; children, 399; total, 1,418.

Department for Diseases of the Eye. — Men, 82; women, 152; children, 153; total, 387.

Department for Diseases of the Ear. — Men, 102; women, 147; children, 163; total, 412.

Department for Diseases of the Genito-Urinary System. — Men, 619; women, 5; children 2; total, 676.

Department for Diseases of the Rectum and Anus. — Men, 74; women, 29; children, 5; total, 108.

Orthopedic Department. — Men, 9; women, 10; children, 33; total, 52.

Dental Department. — Men, 300; women, 420; children, 685; total, 1,405.

The number of visits made by patients, old and new, at the Central Office is 36,956, classified as follows:— Medical, 15,440; surgical, 21,516; total, 36,956. The number of patients treated in the Districts is 11,576, including 279 cases of midwifery, classified as follows: men, 2,062; women, 4,311; children, 5,203; total, 11,576. The results of treatment in the Districts are as follows:

Discharged, cured or relieved	10,470
Removed to Hospitals	840
Died	296
Remaining under treatment	51
	11,657
Under treatment at last annual report	81
	11,576
The number of patients treated at the Central Office and in the Districts is	30,172

Number of cases of midwifery attended during the year	279
Number of cases of midwifery attended since July, 1856	4,724
Whole number of patients since October, 1796	931,344
Whole number of patients since July, 1856,	812,541
Average daily attendance at Central Office	123
Largest number present any one day, April 26	224
Smallest number present any one day, January 28	40
Number of recipes put up at Central Office during the year	42,210
Number of house recipes	34,221
Number of district recipes	7,989
Largest number of recipes put up in one day, May 17	251
Smallest number of recipes put up in one day, January 28	41
Number of paid recipes	38,747
Number of free recipes	3,463
Number of paid dental patients	900
Number of free dental patients	505

The list of medical officers is as follows: —

Surgeons: Drs. Charles E. Inches, J. Foster Bush, George N. Monks, Edward O. Otis. Physicians: Drs. Robert Disbrow, Joseph P. Oliver, John Dixwell, Thomas M. Rotch, Claudius M. Jones, Henry C. Haven, Harold Williams, James J. Minot, George M. Garland, Edward M. Buckingham, Vincent Y. Bowditch, William C. Emerson, Robert B. Dixon, Frederick W. Vogel, Russell Sturgis, Rufus A. Kingman, Thomas F. Sherman, James S. Howe.

Department for Diseases of the Skin.— Physicians: Drs. Francis B. Greenough, Abner Post. Department for Diseases of the Nervous System. — Physicians: Drs. William N. Bullard, Philip C. Knapp. Department for Diseases of Women. — Physicians: Drs. Francis H. Davenport, John W. Elliot, John B. Swift, George G. Hayward. Department for Diseases of the Throat and Nose. — Physicians: Drs. Thomas A. DeBlois, John W. Farlow, Edward W. Warren. Department for Diseases of the Eye. — Physicians: Drs. William D. Hall. Department for Diseases of Ear.— Physicians: Drs. Franklin H. Hooper, George A. Leland. Department for Diseases of the Genito-Urinary System. — Physicians: Drs. George H. Tilden, Francis H. Watson, Hayward W. Cushing, Gardner W. Allen. Department for Diseases of the Rectum and Anus. — Physicians: Drs. Walter J. Otis, William D. Hodges.

Obstetrical Department. — Physician: Dr. Charles M. Green.

Orthopedic Department.— Physicians: Drs. Royal Whitman, William M. Conant.

Dental Department. — Dentist: Dr. Joseph E. Waitt.

District Physicians: No. 1. Dr. Willis B. McMichael. No. 2. Dr. Herbert B. Whitney. No. 3. Dr. Frederic M. Briggs. No. 4. Dr. Edward Reynolds. No. 5. Dr. Howard M. Buck. No. 6. George E. Richards. No. 7. Dr. Thomas F. Temple. No. 8. Dr. Winfried B. Bancroft. No 9. Dr. Frederic W. Doggett.

Apothecary: Frederick H. Dudley. Assistant Apothecary: Joseph S. Lang.

WILLIAM H. H. HASTINGS, *Supt.*

Correspondence.

HOW TO ABORT A FELON?

WEST DENNIS, MASS., Oct. 10, 1886.

MR. EDITOR, — I have read recently, I think, in the columns of your JOURNAL, a formula for "how to abort a felon," the basis of which was flexible collodion.

I cannot find the formula now and cannot remember it. Will you or some one of your readers inform me through your paper, and oblige, yours respectfully,

H. S. KELLEY, JR.

PROFESSIONAL LETTERS OF RECOMMENDATION.

NEW YORK, Oct. 8, 1886.

MR. EDITOR, — Some years ago I gave a letter to a soidisant importer of "pure Hungarian wine," telling him that I had tasted the samples he had sent me, that I liked the taste and was glad to know where I could get a *vin de crû*, when needed in my practice.

To prevent unpleasant ethical complications, I called on the so-called importer and told him that my letter was intended solely for his personal use, and that under no conditions was it to be used as an advertisement of his wares to the general public. He professed to understand me perfectly, and said he would keep my letter as a valued one and put it with those of Longfellow, Salvini, Tanner the starver, and the late President Garfield's Doctor Bliss.

A few months ago the importer called on me, when I asked for proof that he was honest in his circular, when stating that his wines came directly to him from the vineyard. For, said I, the records of the New York Custom House fail to show that you have passed your wine as other importers pass what they bring from foreign ports. He told me that "a trade secret" which he would explain to me was the obstacle to having his name appear as those of Park & Tilford, John Duncan's Sons, and others appear on the entry book of the Custom House. He has never called to tell me the secret, nor has he explained (as he promised to do) why the late Doctor Frank H. Hamilton was mistaken in supposing that his name had been fraudulently used, as certifying to the excellence of the wines in question.

To-day, I was handed a trade circular sent by the importer (?) to a gentleman of this place, in which my name is added to the long list of those who have lauded the excellence and efficacy of those pure Hungarian wines.

Such conduct is dishonest, and I wish to let my medical friends know with what care they should deal with an imposter like the one referred to.

Yours respectfully,

JOHN T. METCALF, M.D.

THE REUNION OF SEVERED DIGITS.

BURDETT, N. Y., October 11th, 1886.

MR. EDITOR,— In your JOURNAL for October 7th, Dr. Souther reports a case of "Severed Digits Reunited."

As you ask for "any undoubted cases" I will give you one. In the early part of my professional career I was sent for to see a boy seven years old, who, the messenger said, had lost several fingers by a blow from an axe.

Being some distance from home I did not reach the patient till three or four hours after the accident occurred. I found that the first, second and third fingers had been completely severed. The wound was diagonal, beginning in the middle phalanx of the index finger near the second joint, and terminating in the last phalanx of the third finger near the root of the nail.

The direction of the wound left the bones of the several

stumps with pointed extremities, each stump being longest on the side looking towards the little finger.

To give the stumps a comely appearance as well as to facilitate the healing of the wound, these points of bone should be removed. Having no bone-forceps with me, I was trying to improvise a substitute, when the grandmother of the boy entered the room, bringing the lost fingers, saying:— "After we had made the boy as comfortable as possible, I thought I would go to the wood-pile and see if I could find the fingers. I fished them out of the snow, but it took a good while to find them all." (It was in the month of March and a deep snow had just fallen), she added "I don't suppose they will grow fast, but I want you to try to save them." I consented to make the trial, to gratify her, at the same time insisting that I did not think there was the slightest chance of success.

I carefully adjusted each finger to its stump, and secured them with bits of whalebone for splints, adhesive straps and bandages. I went the next morning fully expecting to remove the dead fingers and give the parts a proper dressing. Removing one of the bandages, I found the finger much too warm for a dead one, and, moreover, there were slight indications of returning circulation in the severed extremity. I readjusted the dressings to that finger, leaving the others undisturbed.

The fingers all united and restoration was perfect except that about half of the last phalanx of the index finger proved to be too distant to get a blood-supply, and was lost. Apparently there was no loss of function, the boy, in later years, used those fingers for writing and other things requiring skilful manipulation.

NELSON NIVISON, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 9, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	633	274	24.48	16 64	12.00	2.08	6.24
Philadelphia	971,363	—	—	—	—	—	—	—
Brooklyn	690,000	304	131	23.76	14.85	8.91	.99	9.02
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	191	65	19.08	20.14	6.26	3.71	6.36
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	149	53	18.09	21.44	4.02	2.68	5.36
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans	238,000	—	—	—	—	—	—	—
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	108	48	13.80	13.80	2.76	2.76	1.84
Pittsburgh	190,000	74	38	37.80	9.45	5.40	6.75	13.50
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	16	6	31.25	18.75	18.75	—	—
Charleston	60,145	59	14	13.52	16.84	5.07	—	—
Worcester	68,383	22	10	13.55	13.55	—	4.55	—
Lowell	64,051	23	—	29.75	4 35	8 70	—	8.70
Cambridge	59,660	14	6	14.28	14.28	—	—	14.28
Fall River	56,863	21	12	33.33	4.76	14.28	4.76	—
Lynn	45,861	11	4	27.27	9.09	—	9.09	18.18
Lawrence	38,825	11	3	—	27.27	—	—	—
Springfield	37,577	—	—	—	—	—	—	—
New Bedford	33,393	14	2	14.28	14.28	7.14	7.14	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	12	2	8.33	8.33	—	8.33	—
Holyoke	27,894	9	6	44.44	22.22	44.44	—	—
Chelsea	25,709	6	0	33.33	16.66	—	—	33.33
Taunton	23,674	7	3	28.56	14.28	14.28	14.28	—
Haverhill	21,795	9	5	44.44	—	22.22	—	22.22
Gloucester	21,713	10	4	20.00	20.00	10.00	—	—
Brockton	20,783	—	—	—	—	—	—	—
Newton	19,759	—	—	—	—	—	—	—
Malden	16,407	5	2	60.00	20.00	40.00	20.00	—
Fitchburg	15,375	7	2	28.56	—	—	—	14.28
Waltham	14,609	8	0	—	37.50	—	—	—
Newburyport	13,716	2	2	50.00	—	—	—	50 00
Northampton	12,896	5	2	20.00	20.00	—	20.00	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 1,738: under five years of age 694: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 388, consumption 279, lung diseases 131, diarrhœal diseases 151, diphtheria and croup 107, typhoid fever 43, whooping-cough 137, malarial fevers 24, scarlet fever 12, cerebro-spinal meningitis nine, measles eight, puerperal fever two. From whooping-cough, New York and Brooklyn eight each, Pittsburgh five, Baltimore four, District of Columbia three, Boston two, Charleston and Lowell one each. From malarial fevers, Brooklyn seven, New York and Baltimore five each, Charleston four, District of Columbia two, Nashville one. From scarlet fever, New York four, Brooklyn and Pittsburgh three each, Boston and District of Columbia one each. From cerebro-spinal meningitis, New York and Fall River three each, District of Columbia, Nashville and Fitchburg one each. From measles, New York six, Boston and Pittsburgh one each. From puerperal fever, Boston and Haverhill one each.

In the 23 cities and greater towns of Massachusetts, with a population of 1,007,635 (population of the State 1,941,465), the total death-rate for the week was 20.28 against 21.71 and 21.50 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,083,817, for the week ending September 25th the death-rate was 21.0. Deaths reported 3,657: infants under one year of age 1 387; acute diseases of the respiratory organs (London) 154, diarrhœa 724, fever 65, scarlet fever 52, whooping-cough 37, measles 29, diphtheria 28.

The death-rates ranged from 16.0 in London to 43.7 in Norwich; Birmingham 19.7; Blackburn 25.9; Hull 25.9; Leeds 27.4; Leicester 20 6; Liverpool 27.5; Manchester 26.6; Nottingham 23.5; Portsmouth 31.8; Sheffield 28.4.

In Edinburgh 16.6; Glasgow 19.1; Dublin 24.7.

For the week ending September 25th, in the Swiss towns, there were 30 deaths from diarrhœal diseases, consumption 28, lung diseases seven, typhus two, whooping-cough, diphtheria and croup, one each.

The death-rates were: at Zurich 5.7; Geneva 12.1; Basle 19.2; Berne 12.8.

The meteorological record for week ending October 9, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Oct. 9, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	2.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	2.00 P. M.	11.00 P. M.	7.00 A. M.	2.00 P. M.	11.00 P. M.	7.00 A. M.	2.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,... 3	30.357	47.9	60.6	36.8	73.0	52.6	71.0	65.5	W.	S.	W.	8	7	10	C.	C.	C.	—	—
Monday,.. 4	30.040	56.5	69.9	43.2	83.0	35.0	72.0	63.3	W.	W.	W.	10	12	12	C.	C.	C.	—	—
Tuesday,.. 5	30.159	52.6	58.2	49.6	81.0	72.0	84.0	79.0	N.	E.	S.W.	10	11	5	C.	O.	C.	—	—
Wednes.,.. 6	30.059	51.8	61.2	43.2	91.0	78.0	84.0	84.3	N.	S.E.	N.	4	8	4	C.	F.	C.	—	—
Thursday, 7	30.240	51.1	57.5	48.8	88.0	75.0	84.0	82.3	N.E.	E.	N.E.	14	20	5	C.	C.	O.	—	—
Friday, ... 8	30.207	51.5	57.3	40.5	97.0	85.0	81.0	87.7	N.W.	E.	W.	4	6	12	C.	C.	C.	—	—
Saturday,. 9	30.116	65.7	79.7	52.7	84.0	44.0	68.0	65.3	W.	W.	N.W.	14	10	4	C.	C.	C.	00.00	0.00
Mean, the Week.	30.174	53.9	66.3	44.9				75.3											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 9, 1886, TO OCTOBER 15, 1886.

EVERTS, EDWARD, first lieutenant and assistant surgeon. Ordered to proceed to Fort Grant, A. T., and there take station. S. O. 94, Department of Arizona, October 1, 1886.

FISHER, W. W. R., first lieutenant and assistant surgeon. Ordered, on the expiration of his leave of absence, to report to the commanding officer, Fort Bidwell, Cal., for duty as post-surgeon. S. O. 93, Department of California, October 4, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING OCTOBER 16, 1886.

WOOLVERTON, THEORON, surgeon. Detached from the United States Steamship "Shenandoah," proceed home and wait orders.

MEANS, V. C. B., assistant surgeon. Detached from the United States Steamship "Shenandoah," and ordered to Receiving Ship "Independence."

PARKER, J. B., surgeon. Detached from the United States Steamship "Swatara," proceed home and wait orders.

SHAFER, JOSEPH, assistant surgeon. Detached from the United States Steamship "Swatara," proceed home and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE WEEK ENDING OCTOBER 9, 1886.

BECKHAM, C. T., passed assistant surgeon. Granted leave of absence for thirty days, to take effect when relieved, October 5, 1886.

KALLOCH, P. C., passed assistant surgeon. Granted leave of absence for twenty-one days, to take effect when relieved, October 5, 1886.

PETTUS, W. J., assistant surgeon. To proceed to Evansville, Ind., for temporary duty, October 8, 1886.

KINYOUN, J. J., assistant surgeon. Appointed an assistant surgeon, October 4, 1886. Assigned to temporary duty at New York, October 5, 1886.

SOCIETY NOTICES.

The Annual Meeting of the Massachusetts Medical Benevolent Society will be held in Room B of the Harvard Medical College on Boylston Street, on the 28th of October, at half-past four o'clock in the afternoon. The Council will meet at four o'clock previous to the annual meeting.

ROBERT AMORY, M.D., *Secretary.*

NORFOLK DISTRICT MEDICAL SOCIETY. — A stated meeting will be held at Rockland Hall, 2343 Washington Street, Roxbury, on Tuesday, October 26th, at 2 o'clock, P.M. The Board of Censors will meet at 1 o'clock, P.M., for examination of candidates. Order of business: I. Reading of records. II. Reports from committees. III. Election of nominating committee. IV. Incidental business. V. Communications: (1) "Case of Typhoid Fever with Cerebral Complications," Harriet L. Harrington, M.D. The discussion will be opened by C. E. Stedman, M.D. (2) "A Case of Occlusion of the Upper Intestine," F. W. Vogel, M.D. (3) Exhibition of an Extempore Syringe-Pump and Aspirator, Edward T. Williams, M.D.

S. ALLEN POTTER, M.D., *Secretary.*

APPOINTMENT.

The Executive Committee of the International Medical Congress have appointed Dr. H. O. Marcy, of Boston, President of the Section (V) of the Congress for Gynecology.

BOOKS AND PAMPHLETS RECEIVED.

Sydenham and Hahnemann. By F. B. Stephenson, M.D., United States Navy. 1886. (Reprint.)

The Sanitary Condition of Harrisburg, (Pennsylvania.) By Hugh Hamilton, M.Sc., M.D. Harrisburg, Pa. 1886.

Announcement of the Regular Session of 1887 of the Hospital College of Medicine. Medical Department of Central University. Louisville, Ky. Wm. H. Bolling, M.D., President.

Annual Announcement of the Louisville College of Dentistry, Dental Department of Central University, Louisville, Ky., for the Regular Session of 1887. A. Wilkes Smith, M.D., D.D.S., Dean.

On Toxic Urine in Relation to Certain Surgical Operations on the Urinary Organs. By Reginald Harrison, F.R.C.S., Surgeon to the Liverpool Royal Infirmary, and Lecturer on Clinical Surgery in the Victoria University. (Reprint.)

How we treat Wounds To-Day. A Treatise on the Subject of Antiseptic Surgery which can be understood by beginners. By Robert T. Morris, M.D. Second Edition. New York and London: G. P. Putnam's Sons. 1886.

Diseases and their Commencement. Lectures to Trained Nurses, Delivered at the West London Hospital. By Donald W. Charles Hood, M.D., Cantab. Philadelphia: P. Blakiston, Son & Co. 1886.

Massage as a Mode of Treatment. By William Murrell, M.D., F.R.C.P., Lecturer on Pharmacology and Therapeutics at the Westminster Hospital, etc. Philadelphia: P. Blakiston, Son & Co. 1886.

A Laboratory Guide in Urinalysis and Toxicology. By R. A. Whitthaus, A.M., M.D., Professor of Chemistry and Physics in the Medical Department, University of New York, etc. New York: Wm. Wood & Co. 1886.

Action of the Trustees of the Boston City Hospital, upon the Petitions for the Introduction of Homœopathic Treatment and for the Admission of Medical Students to Surgical Operations and Clinical Instruction. Boston: Rockwell & Churchill. 1886.

The Physiological Action of the Heavy Oil of Wine. By Hobart Amory Hare, M.D. (Univ. of Pa.), Physician to the Children's Dispensary of the University Hospital and to St. Clement's Dispensary; Assistant in Physical Diagnosis in the University. (Reprint.)

Elements of the Comparative Anatomy of Vertebrates. Adapted from the German of Robert Wiedersheim, Professor of Anatomy in the University of Freiburg-in-Baden. By W. Newton Parker, Professor of Biology in the University College of South Wales and Monmouthshire. With additions by the author and translator. 270 woodcuts. London: Macmillan & Co. 1886.

UNITED STATES ARMY MEDICAL DEPARTMENT

Lecture.

ON TETANY AND TETANILLA.[1]

BY JULIUS ALTHAUS, M.D., M.R.C.P. (LOND.),
Corresponding Member of the New York Academy of Medicine, Senior Physician to the Hospital for Epilepsy and Paralysis, Regent's Park, London.

Amongst the convulsive diseases of the nervous system which we are in the habit of encountering in the practise of our profession, there are some which have, on account of the extreme severity of their symptoms, engrossed the attention of physicians almost from time immemorial. The principal representative of this class is epilepsy, which was for a long time believed to be a special infliction sent by the wrath of the Almighty, being termed morbus sacer by the classical writers. Tetanus arising from injury and exposure to cold, was likewise already well known to Hippocrates and Aretaeus, and has as well as epilepsy and chorea, engaged the attention of innumerable observers, while even at the present day all these diseases offer to those who are willing to investigate them patiently, points of interest that are still involved in obscurity. The complaint to which I intend to refer to-night, has no doubt always existed, like the more formidable diseases which I have just mentioned; but has only been recently recognized as a special entity, partly no doubt on account of its symptoms being habitually much less severe, and partly from having been confounded with other diseases, which although they resemble it in some particulars, are nevertheless totally distinct from the same.

Tetany is not frequent, but where it occurs, presents points of considerable physiological and pathological interest, and as it is occasionally so severe as to lead to a fatal result, it is also practically important for physicians to be familiar with its clinical features and its pathology and treatment.

There is another kindred complaint to which I have for many years past drawn attention at the hospital, and which I have termed tetanilla. I have, however, up to the present time never published my observations on this subject, and was in 1881, forestalled in this point by the late Professor Friedreich, of Heidelberg, to whom we owe such excellent work on muscular atrophy and hypertrophy, and who was also as you know the first to describe that peculiar and unusual form of locomotor ataxy which runs in families and habitually begins about the age of puberty, and which is now generally designated by the name of Friedreich's disease. This able pathologist, whose premature death from aneurism of the aorta we deplored not many months ago, gave to the complaint which I have just introduced to your notice as tetanilla, the somewhat barbarous name of paramyoclonus multiplex. Löwenfeld and Seeligmüller have more recently described cases of this affection; and I will make use of the opportunity which this meeting affords me, to speak of my own experience with regard to it. Of course, I do not in the slightest degree wish to interfere with Friedreich's unquestionable right of christening a disease of which he was the first to record his observations; but I confess that the name tetanilla which I had as it were privately given to the affection, sounds to me much more euphonious than paramyoclonus multiplex; while the fact that both appear to be functional disorders of the nervous system — showing their chief symptoms in closely allied muscular disorder — would seem to favor the idea of giving them somewhat analogous names, expressing at the same time in the word, tetanilla, the lesser degree of severity which the latter form is apt to assume in practice. It will, however, be for the profession to decide which name shall eventually be adopted.

I think I shall do best if I commence my remarks on tetany, of which I have seen altogether ten cases, four in males and six in females, with a short historical retrospect of the work which has been contributed by various authors who have had opportunities of investigating this complaint. I do so more particularly because recent French writers have claimed it as a peculiarly French disease, as one which has, according to them, "une paternité toute française"; the fact being that the first description was given by a German physician, Steinheim, in 1830, while the first French publication by Dance, appeared quite a twelvemonth later: namely, in the *Archives Générales de Médecine* for the year 1831. Of course, it is not to be supposed that Dance should have been acquainted with Steinheim's essay at the time he wrote; for the French have only commenced at a very much later period to read German publications; and when Dance wrote they were in the habit of looking upon everything German or English as only fit for barbarians, whose prescriptions might be good enough for horses, "*médecine de cheval*" being even now a not uncommon term with the French for any foreign system of treatment. At any rate this fact remains that Steinheim was a year in advance of any other writer on the subject, and it seems therefore hardly fair that Delcroix should in his recent thesis on the subject, moved no doubt by the noblest patriotic sentiments, have substituted the year 1830 for 1831, as the date of publication of Dance's paper. I have myself verified the reference, and while I am free to admit that Dance's publication is an unusually able one, have to state that in point of time it is unquestionably the second, not the first. Dance, who was then physician to the Hotel Dieu, at Paris, has given a detailed description of four cases of the affection, and pointed out with considerable minuteness its difference from simple cramps, muscular rheumatism, tetanus, hysteria, as well as certain affections of the spinal cord, nerves and muscles. He laid stress on the paroxysmal character of the spasm, and the favorable issue of all cases in spite of occasionally alarming appearances; and believed the disease to be a kind of intermittent and non-pernicious tetanic fever. I may here say at once that, although Dance's paper is more interesting than Steinheim's, nevertheless the French writer's view of the pathology of the complaint, namely, that it is owing to malaria, has not been confirmed by further experience; while the German author's statements that the rheumatic diathesis is at the bottom of the disease, has, at least for a certain number of cases, turned out to be correct.

The name tetany, which is universally used, originated with Corvisart, in 1851. Trousseau, who in his practice at the Hotel Dieu, in Paris, enjoyed unusual opportunities of studying the complaint, met with it at first only in nursing women, and called it rheumatic contracture of wet-nurses; but he soon perceived that it also arose from other causes than lactation, although he looked upon the latter as the most

[1] Read before the New York Academy of Medicine, October 21st, 1886.

active and frequent causative influence. The complaint was subsequently studied by Moxom, who termed it remittent tetanus, by Wilks, Riegel, and more especially by Kussmaul, (in 1871), whose fine clinical instinct enabled him to draw such a striking picture of the complaint that he succeeded more than any previous writer in attracting general attention to it. Erb, Chvostek, and Weiss are amongst the later authors who have added their quota to the pathology of this disease.

Tetany consists of a succession of attacks of tonic spasm or rigidity of certain groups of muscles, mostly symmetrical, which follow one another at somewhat irregular intervals, and are after a variable time being followed by relaxation. The attacks are not accompanied with loss of consciousness, but there is throughout the course of the complaint undue mechanical and electrical excitability of the motor nerves and muscles.

The chief causes which appear to give rise to tetany, are certain kinds of irritation acting on an otherwise predisposed or enfeebled nervous system. Thus it occurs after and in consequence of persistent diarrhœa, more especially in the underfed and half starved children of the poor. Kussmaul has described the case of a boy aged six, who had been brought up by hand in wretched surroundings, and had lately lived almost exclusively on small beers; indeed, during the first few days the little fellow was in the hospital he refused all food, excepting beer, and suffered from incessant diarrhœa. He eventually recovered from incessant diarrhœa as well as the tetany, but was three months afterwards seized with a violent attack of vomiting and purging, after which the tetany reappeared. The same cause I ascertained in the case of a little girl, aged three, whom I saw at the hospital in 1881, and who had been reduced almost to a skeleton by incessant diarrhœa. The attacks came on in her hands and feet every few hours, and lasted about twenty to thirty minutes, during which time she kept yelling in the most fearful manner. Her mother had suffered from hysterical fits, and a sister had had chorea. Obstinate constipation and entozoa in the intestines have likewise acted as existing causes.

A case is on record in which the ova of tænia medio-canellata and trichocephalus dispar caused tetany, which latter ceased after the parasites had been expelled from the bowels. The irritation of dentition has likewise been assumed to give rise to tetany, although the evidence supporting this point is not strong. Irritation in the sexual sphere of women, and occurring in connection with menstruation, pregnancy, the puerperal state and lactation, is however, an undoubted factor in the production of the complaint. It also occurs after small-pox, cholera, typhoid fever, and other acute diseases; indeed, Aran has seen it occurring in a dozen convalescents from typhoid fever who were in the hospital at the same time. Bauer has also seen it simultaneously in three women of the same family who had eaten unwholesome bread. This had been procured from a distance on account of its cheapness, and was so mouldy and nasty that the men of the family refused to touch it. None of them had tetany, and the three women recovered after discontinuing to eat of this particular bread. Bauer thinks that it may have contained ergot of rye, but could not procure a sample for analysis.

Another active agent in the production of the complaint, and which was chiefly dwelt upon by Steinheim and Trousseau, is the influence of wet and cold. The latter observer describes the case of a man who was found in the streets of Paris one morning in winter, having passed the night there in a state of intoxication, and being so stiff that he was believed to be in an epileptic fit; yet he had been quite conscious all the time. While under observation in the hospital, he was found to be subject to attacks which lasted from a few minutes to half an hour, and had such good use of his limbs in the intervals as to enable him to attend upon the other patients in the wards. On account of the undoubted influence of cold in its production, tetany has also been called intermittent rheumatic contracture. Sleeping habitually in damp rooms, or working in damp shops, appears to favor an outbreak; and exposure no doubt often acts concurrently with other influences. Thus one of the nursing women in whom Trousseau saw tetany, was found to have got out of bed in the night, and gone outside into the yard of the hospital, in order to fetch water from a pump, in midwinter. She died of asphyxia produced by tetany of the respiratory muscles shortly afterwards. In one of the cases which have fallen under my own observation, tetany came on quite suddenly in a young man aged eighteen who had, while skating in the Regent's Park in London, broken through the ice, and had been nearly five minutes in the water before he was rescued. An emotional influence, however, was probably likewise active in this case in addition to the chill; as the patient being unable to swim, underwent an agony of fear of drowning all the time he was in the water. It is not uncommon that there should be several influences at work in determining the outbreak of a nervous affection; I will only remind you of tabes spinalis, in cases of which we generally find a history of three causes, namely, syphilis, exposure to cold and wet, and over-exertion, whether physical or mental.

An emotional influence was likewise evidently at work in another case of tetany which was under my care in 1879, and which was that of a young lady, aged twenty-one, who had been engaged to be married, and in whom the disease appeared quite suddenly the day after she had had a quarrel with her lover, in consequence of which her engagement had been broken off.

Simon and Regnard have described what they call an epidemic of tetany, which occurred at Gentilly in France, where it went through a young ladies' school. At first the cases were very few; one girl was affected in July, and another in October; in November, however, quite an epidemic broke out, there being eight new cases on one day, and eleven on the next. The governess at first tried to arrest the progress of the disease amongst the girls, but eventually got it herself. The school was then broken up and all the girls recovered rapidly. Similar epidemics have been described as having occurred in some prisons and asylums in Belgium. It is, however, quite clear from the description given of the epidemic amongst the French schoolgirls that there was no real tetany present, but that it amounted to an endemic manifestation of hysteria which in its symptoms had a considerable resemblance with tetany. We know that hysteria may mimic most diseases, and need therefore not be surprised that it will occasionally mimic tetany. With regard to the cases observed in the public institutions in Belgium, it appears probable that they were

in reality cases of epidemic spinal meningitis, as in some of them an inspection was obtained showing the pathological lesions of meningitis; and I shall presently in my remarks about the diagnosis of tetany, refer to the possibility of its being occasionally confounded with that disease. It is, however, a fact that cases of tetany do sometimes occur together; but the explanation of this would seem to be the influence of exposure to unusually severe cold prevalent at the time. Thus Weiss had twelve cases under his care in the severe winter of 1881, at Vienna, and Chvostek saw seven in the winter of 1880, in Austrian soldiers, who during target practice suffered considerably from exposure to the unusually intense cold which then prevailed.

In May last, Ord, of London, exhibited at the Medical Society of that city, the case of a woman who showed the usual symptoms of myxœdema, and, in addition to them, a peculiar symmetrical contracture of the flexor muscles of the hands and legs, strongly resembling tetany. In connection with this case, it is interesting to remember that Weiss should have seen four cases in which the excision of the enlarged thyroid body, by Professor Billroth, of Vienna, appeared to give rise to the affection. In one of these cases it appeared on the sixth day after the operation, in a second on the evening of the same day, and in two other instances immediately afterwards. One of these patients eventually died of it. In another case, this tetany lasted six days after the operation, then disappeared, but relapsed when an abscess had formed in the neck; it ceased finally after this had been opened and healed. Weiss does not assume any particular relation to the bronchocele, but thinks that it was only the irritation caused by the surgical operation *per se*, which caused the tetany; yet it seems a curious coincidence that four cases of tetany should have appeared in connection with thyroidectomy, while it is not known to have occurred after any other surgical operation; and in connection with this, Ord's case, which I have just mentioned, is of interest, as raising the question whether there may not be some more intimate connection between atrophy or absence of the thyroid gland and tetany than has hitherto been assumed. I would recommend this point to your attention, should similar cases present themselves to you in your practice.

Tetany has probably no connection at all with certain kinds of occupation, as has been assumed by some writers. Indeed, it has by some been termed cramp of tailors, cobblers, and seamstresses, or professional spasm generally; but the fact that it not uncommonly affects infants, as well as women who have no particular kind of manual labor to perform, and finally, in men addicted to all kinds of occupations, speaks strongly against this assumption. The age at which it is most frequent is the period between one and five years, and again, that between fifteen and thirty years. As to the influence of sex, females seem to be rather more liable to it than males.

On reviewing all the different determining influences which I have just mentioned, it is impossible not to be drawn to the conclusion that they can, one and all, only be looked upon as exciting causes, and that a constitutional neurotic disposition must be present in patients, in order that such causes as cold, diarrhœa, etc., may be effective in leading to the outbreak of tetany. As, however, this point has not as yet been very clearly made out, I have taken some trouble in gaining information upon it in those cases which have happened to come under my care. The result has been that in not a single case was there any direct heredity, for to all my patients and their friends and relations the disease was entirely new, and something they had never known or heard of. In five out of ten cases I have seen, however, such diseases as hysteria, migraine, epilepsy, and chorea had occurred in the parent, or other members of the same family. This would already give a proportion of fifty per cent., but I have to add to this a case of atavism, as the maternal grandfather of one of the patients had died insane; and another case, where the parents of the patient were first cousins, and where, therefore, a neurotic predisposition might be assumed to exist. It is, therefore, seen that only three cases out of ten were, or appeared to be entirely free from a neurotic taint, so that my contention of a constitutional tendency being at the base of the complaint, would appear to be well substantiated, more especially when we remember that either through ignorance or carelessness of the persons concerned, the family history given us in such cases is frequently far from complete.

The evolution of the symptoms of tetany may be somewhat rapid, or more gradual. In some cases, and according to my experience, more especially in those where a cause has acted very suddenly, the disease may appear at once fully developed, while in those where the power of resistance of the nervous system appears to have been more gradually undermined by various deteriorating influences, there is a progression in the symptoms, which goes from piano through the different degrees of crescendo up to forte, and eventually to fortissimo. Amongst the premonitory symptoms, where such are present, we find more particularly a general feeling of malaise, as of some impending illness, headache, dizziness, specks floating before the eyes, and a feeling of stiffness and awkwardness, or shooting pains in the limbs. Slight temporary rigidity of certain muscles may be combined with this, or there may be a few twitches, which subside again presently. These symptoms generally become aggravated, and eventually, tetany sets in. Both hands are then seen to have assumed a peculiar position, which is not always the same, but varies according to the several groups of muscles which may happen to be affected. In most instances, it is the muscles supplied by the ulnar nerve which suffer; in some, those under the control of the median nerve, while only very occasionally those which receive their motor impulses through the musculo-spiral nerve are affected.

In accordance with this, it is found that the common position of the hand in tetany is the conical one, resembling that which the accoucheur uses when introducing his hand into the vagina. In this the thumb is forcibly adducted, and the other fingers are flexed in the metacarpo-phalangeal joint, and pressed against the thumb, while the wrist is bent, and turned towards the ulnar side of the arm. The spasm may stop there, or proceed higher up, involving the forearms, which may be bent, and crossed over the epigastrium, and the arms, which may be strongly adducted to the body.

In some cases, again, the fingers are so strongly clenched that the nails enter the flesh, and produce eschars; the thumb may almost disappear underneath the other fingers, or it is squeezed between the first and second finger, so as to show the thumb-nail between their first phalanges. Where the interosseous

and lumbrical muscles are rigid, the hand assumes the bird-claw position which was first described by Duchenne; or there may be spasm in the extensor muscles, the fingers and wrist being stretched out, and unable to be bent, and the fingers being wide apart from each other. A considerable variety of positions may thus be produced, and it is, therefore, important to remember that the position of the hand which was first mentioned is not absolutely pathognomonic of the disease. At the same time, there is in true cases of tetany always some degree of rigidity in the muscles supplied by the ulnar nerve, and when this is entirely wanting, the case is most probably not one of tetany.

In the lower limbs the spasm is generally seen to begin in the toes, which are held in plantar flexion, closely pressed against each other, but extended in the metatarso-phalangeal joint. The big toe is adducted and beneath the others the foot in the varo-equine position, with the heel drawn up, and the tendon Achilles strongly retracted; or again the toes may be stretched out, and each one be as wide apart from its neighbors as possible. The feet may be adducted, the knees extended, and the thighs stretched on the pelvis, while in other cases the legs are drawn up to the abdomen. Walking during the attack is thus rendered difficult or impossible; indeed, sometimes there is persistent contraction of the muscles of the calves, so that the patient is quite prevented from moving about, while in other cases the rigidity is so distributed that only the heel touches the ground, and the toes are raised up. The effect of this is the same, namely, to interfere altogether with walking.

In some cases only one side of the body, or only the upper limbs, or only the lower ones are affected, or they may suffer alternately, but mostly there is symmetrical affection in both sides of the body.

In the large majority of cases, only the muscles of the extremities are thus affected; but in some the rigidity also involves those of the head and body. The head may be pulled down on the chest, and the spine curved; the muscles of the neck may be so rigid as to stand out like tight cords, and to compress the jugular veins; the lips and tongue may be quite rigid; the eyes may be spasmodically closed, and through contraction of one or the other of the ocular muscles, the various forms of strabismus may be produced. The face may appear statuesque, and devoid of any mobility of features. The muscles of the lower jaw, and of the pharynx and larynx, likewise do not escape in some cases, and this leads to difficulty in masticating, swallowing and breathing. In extreme instances there is spasm of the glottis, with great dyspnœa and cyanosis. The diaphragm and the other muscles of inspiration then appear to be fixed, and if this condition is not speedily relieved death from apnœa is the result. Even the bladder may suffer, as shown by retention of the urine, together with frequent desire to micturate. A very bad attack, in which dyspnœa may be so severe as to threaten the life of the patient, sometimes ends with profuse perspiration, and as soon as this is well established, all symptoms are relieved. In one of Dance's cases, perspiration was so abundant as to form a regular cloud of steam around the patient.

The contraction of the muscles is sometimes very painful, and more especially so in children, who often scream and yell throughout the attack. In other cases there is rather a stiff and bruised feeling than actual pain, together with great tenderness on pressure. The degree of contraction may vary from one minute to another, and this occasionally leads to spasmodic jerkings of the muscles. Where there is much pain, the patient is restless and agitated during the night, and desires constant change of position, while another may lie still in bed like a statue. During the attack the muscles may be entirely withdrawn from the influence of volition; in other cases the rigidity is more moderate, and allows of some degree of movement. Habitually the muscles feel as hard as iron. In a severe case there is so much resistance to passive movements that a great deal of force is required to counteract the rigidity, and the instant we let go the contraction re-asserts itself. Attempts to overcome the rigidity are very painful. Friction often diminishes the rigidity, while pressure may increase it. A sudden impression of cold and heat may also arrest the spasm; thus, if the patient be made to stand with his naked feet on the bare floor, or if his hands be immersed into vessels filled with hot or cold water, the rigidity may relax, but only to re-appear again as soon as the influence of these agents is withdrawn. The duration of the attack is variable; it may last only five minutes, or as many hours, and may be repeated over and over again, but when the condition appears to have continued for days together, it is probable that, as in certain cases of epileptic fits, the intervals have been short, and remained unnoticed by the attendants. If this should not be the case, then I would say that the case was not one of tetany.

Trousseau was the first to notice that, as long as the diseased condition persists, we may, at a time when the patient is quite free from rigidity, produce it almost immediately by compressing the affected limbs, more especially at points where we can act on large nerves or vessels, so as to interfere with circulation. This discovery was made accidentally. He had ordered a woman suffering from tetany to be bled, and noticed that when the bandage was drawn round the arm, the muscles below tightened. He afterwards found that such an effect is produced, more especially with the upper limbs, where pressure on the brachial plexus above the collar-bone or the median nerve in the arm, will lead to it. In the lower limbs, pressure on the sciatic nerve or the femoral artery may do the same, but here the result is not so quick and certain as in the upper limbs. In one case, Trousseau found a very suggestive illustration of the well-known law of reflexes formulated by Pflüger, namely, that the effect of the stimulation is greatest at or near the spot where it is applied, and that an increase of stimulus is required for affecting more distant parts, which are then acted upon in a certain order. In that case, ligature of the right thigh produced first contraction in the toes of the right foot, then in those of the left foot, afterwards in both hands, and finally, a violent attack of hysteria.

Kussmaul was led by his observations on this symptom to the result that it is pressure on the arteries, rather than on the nerves, which causes these effects in the muscles. When he compressed the brachial artery of a patient during a free interval, he noticed that in twenty or thirty seconds the fingers began to twitch; in two or three minutes the flexion appeared to be increasing, and very soon afterwards the hand and forearm were spasmodically bent. The proceeding was not painful. When the pressure was with-

drawn, the spasm disappeared, and pressure on the nerves did not cause the same effect.

My own observations have led me to the result that Trousseau's symptom is produced by pressure both on the nerves and on the bloodvessels, and that complete compression of the latter leads more quickly to the expected result than that of the former. This is more particularly seen in the lower extremities, where compression of the femoral artery in front of the os pubis brings about muscular twitches and rigidity much more rapidly than compression of the sciatic nerve in its notch.

My study of this point has also led me to a very singular observation, which is likely to prove of some importance in the diagnosis of tetany from hysterical contracture, as it tends to show that tetany and hysteria are two widely different conditions. I have seen cases of hysterical contracture closely resembling the habitual position of the hand in tetany, where the history of the case was obscure, and it was difficult to make out whether the muscular rigidity was paroxysmal, as it is in tetany, or continuous, as it is in hysteria. In these cases compression of the limbs by Esmarch's bandage enabled me to decide this question; for it appeared that while in tetany pressure increases the rigidity still further, on the contrary, in hysterical contracture the rigidity was relieved, and ceased after the bandage had been applied for some time, to return however again almost immediately after the pressure was withdrawn. This singular circumstance seems to show that the arterial anæmia and venous congestion which is produced in a limb by compression, may cause opposite effects according to the condition of the nervous system with which we may have to deal, leading in one case to contraction, and in another to relaxation of the muscles. This is a point which much requires further elucidation, and the study of which I would recommend to you in similar cases, as it may eventually throw light on the more intimate nature of the vaso-motor disturbance which is present in such conditions as hysteria and tetany, and of which we are as yet in almost complete ignorance.

(To be continued.)

Original Articles.

PANCREATIC HÆMORRHAGE AND SUDDEN DEATH.[1]

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SAFE in its secluded anatomical position, the pancreas rarely challenges attention as an organ of clinical or pathological interest. When compared with its neighbors among the abdominal viscera, it is content to hold a modest secondary rank. Ordinarily, it eludes the touch of the clinical observer's fingers, and it is too often neglected by the pathologist's eye and scalpel. The liver, the kidneys, the stomach, the intestines and, preëminently, the uterus, have abundant reasons for regarding their unobtrusive racemose associate as of slight relative consequence, if volumes, and pamphlets, and other medical writings can count as proof.

But although the pancreas does not pretend to merit distinguished attentions, or push itself into notice like the womb or the liver, although it does not enter into the title of thick volumes devoted to its study, it occasionally becomes the subject of clinical curiosity. Its privacy is invaded by neoplastic intruders or by the assaults of inflammation, and it is then that its right to be is demonstrated by the digestive disturbances which its impaired functions entail. Parenchymatous and interstitial fatty changes, purulent and fibrous processes of inflammatory origin, both acute and chronic, alterations due to syphilis and the presence of tumors, gummatous, tuberculous or carcinomatous (especially the last), amyloid degeneration and affections of the excretory ducts, retention-cysts either inflammatory or calculous,— these comprise the short list of diseases of the pancreas which modern pathology recognizes. How obscure and rare these affections are, the brief space devoted to them in the standard works of our best writers gives ample proof; their diagnosis, except at the autopsy, and their treatment are among the *opprobria medicinæ*, as all clinical masters admit.

But it is not with these truly recondite diseases that this note is concerned. The purpose of this brief paper is to illustrate a rare accident to which the pancreas is liable, and to place on record some observations relating to an unusual cause of sudden death in which this hidden organ plays an important part.

It is but recently that attention has been called to the fact that hæmorrhage within and around the pancreas quickly eventuates, in many cases, in the death of the patient, the fatal issue resulting either immediately after an interval to be measured by minutes, or, secondarily, after a few days. It is for the purpose of adding some new examples of the former of these two classes, the relation of pancreatic hæmorrhage to *sudden* death, that these notes are offered. They are intended as additions to the brief list already on record, and as a response to the suggestion of Friedreich who, commenting on Zenker's observations, writes: "Cases such as those related by Zenker merit great attention, and it must be an object with future workers to increase the statistical material by the addition of fresh cases."[2]

A single word is proper here relative to the instances of sudden death which are described. They are cases of persons found dead under circumstances requiring a medico-legal investigation. Under the system of inquests at present and for the past nine years in successful operation in Massachusetts, sudden and violent deaths become the subject of inquiry in a manner greatly in contrast with the antiquated and objectionable method of inquest by the coroner and his jury. Instead of the inverted and dilatory plan which first summons a coroner in a case of violent or sudden death and leaves to his often clumsy judgment the question of an autopsy, and who shall make it, for determining the cause of the death, the Massachusetts law places the case at once in the hands of a medical man commissioned by the State, and directs him to ascertain the cause and manner of the death, by autopsy if he deems it necessary, and to report the results of his examination to the proper judicial officers, if he is of opinion that the death resulted from the act or neglect of some person other than the deceased. An inquest then follows, the evidence being taken

[1] Read by title at the meeting of the American Association of Physicians and Pathologists, June, 1886.

[2] Ziemssen's Cyclopædia of Medicine, vol. viii, p. 624.

and properly sifted by a judge fully competent for such a duty, and the entire investigation becomes, in this way, in fact and in name, a truly medico-legal one, its different stages following in natural consecutive order. It thus happens that many sudden and mysterious deaths which are accounted for usually under the familiar and convenient formula "heart-disease" receive a truer and more scientific interpretation under a system which favors or requires well-ordered post-mortem examinations; and it was in this way that the writer, holding a commission as a medical examiner, came upon what may seem an unusual number of rare cases, which he now places on record.

CASE I. Humphrey L., aged forty-five, a strong and rugged laboring man, lived alone in two rooms upon the ground floor of a tenement-house. He was found dead in his front room late in the afternoon of Monday, October 20th, 1884. He had not been seen during that day or the previous day (Sunday), but he was at work all day Saturday, and in the evening of that day appeared in his usual robust condition of health. He was not intemperate in the use of alcohol, and indulged to inebriety at long intervals only.

When discovered, his dead body, fully clothed, was in a sitting attitude in a chair, the hands resting naturally on the knees and the head dropped forward upon the breast. He had the posture and appearance of one asleep in his chair. The condition of the room gave no indication of illness or distress on the part of its occupant before his death; there was no vomitus or sign of an attempt to prepare or to take domestic or other remedies. When and in what manner death claimed its victim, could only be guessed; the body was cold and cadaveric rigidity was developed to an extreme degree. The only suggestion which the surroundings offered upon the matter of the time of the death was the fact that the bed-clothing was turned down away from the pillow, the natural act of one about to get into bed. The autopsy was made twenty hours after the discovery of the body. Rigidity continued in its fullest degree. There was moderate cadaveric lividity of the skin of the lower part of the back, the thighs and the legs. The lips and the ears were of a violet color. The tongue was in normal position. The corneæ were bright; the pupils measured three millimetres in diameter. The body presented no marks of violence, but was that of an exceptionally strong and muscular man, with little adipose. The heart was normal in every particular. The blood was dark in color and almost wholly fluid, only a few soft, dark clots appearing. The right auricle and ventricle were moderately filled, but not distended; the left ventricle was contracted and empty. The lungs were somewhat emphysematous. Quite general, firm pleuritic adhesions had obliterated the right pleural cavity. There was moderate gravitation injection of the lower parts of both lungs, with some œdema of the right lower lobe. The spleen, kidneys and liver showed nothing noteworthy beyond a very moderate degree of injection. The stomach contained a little less than a pint of thin, gruel-like material, having the gross appearances of oat-meal and milk recently ingested. The gastric mucous membrane was of a dull brown color at the fundus of the organ, especially marked at the summits of the rugæ; elsewhere it was normal. There was no odor of alcoholic liquor.

When the stomach and intestines were turned aside, before any of the abdominal organs were opened or disturbed, the region of the pancreas showed, beneath the peritoneum, the dull red color of extravasated blood in the sub-peritoneal tissues, extending over a space a hand's breadth in diameter. Upon section of this area and exposure of the pancreas, it was found that the organ lay in a mass of effused blood, and was itself infiltrated with blood throughout its extent, but more especially in its outer half, toward the tail, while the outer third was not only deeply stained with blood, but was softened to a marked degree.

The splenic artery was very tortuous, and somewhat enlarged. The intestines were normal in appearance, and contained normal fæcal matter. The brain gave no appearance of disease, or of abnormal blood-supply.

CASE II. Mary E. H., aged forty-four, was found dead in her bed, at noon, November 3d. She lived in wretched squalor in an attic, getting a scanty income as a charwoman. She drank beer every day, her neighbors said, but was rarely intoxicated. She was seen at 6, P. M., the day before her death, and was apparently in perfect health. She went to bed with her boy, a lad of about ten years: the latter stated that nothing occurred in the night out of the usual course. The woman got up in the morning and dressed herself; presently, she complained a little of her head, and soon went to bed without undressing. The boy went to school, and on his return home found that his mother had died in his absence, and was lying where he had left her. Just when, or under what circumstances the woman died, no one knows. She made no complaint to her neighbors, and her statement to her boy that her head felt badly was the only suggestion that she was in any way ill. I saw her dead body at 2.20, P. M., and rigor mortis was then fully established, and the face showed marked lividity.

The autopsy was made twenty-four hours later. Post-mortem rigidity was as pronounced as at the first inspection, and the face, lips, tongue, and neck were livid. The tongue protruded as far as, but not outside the lips. The pupils were small; the body was emaciated.

The heart was normal in structure. It contained dark, clotted blood, the amount in the right cavities being relatively large. The lungs were much reddened in the dependent parts, but were of natural appearance in front and superiorly. They were crepitant everywhere.

In the depressions of the peritoneal cavity, about eight fluid ounces of thin, red fluid were found; there was no other sign of hæmorrhage within the peritoneum. The spleen was soft and deeply reddened. The kidneys were normal; the liver was healthy. The stomach was reddened somewhat at its cardiac end, but in other respects was normal in appearance. The intestines presented nothing abnormal; the mucosa was pale. The colon and rectum contained normal fæces.

The pancreas was infiltrated with blood throughout its extent, most markedly at its splenic end. There was a moderate amount of blood effused in the retro-peritoneal tissue. The organ itself showed nothing remarkable on section, beyond the hæmorrhagic infiltration above noted. Its size was not increased.

The womb was healthy: the ovaries were atrophied. The vessels of the scalp, skull, and dura were injected. There was very moderate injection of the pia. The

brain showed no change, in its gross appearance, from the healthy condition.

Case III. Catherine F., aged twenty-six, had many quarrels with her husband on account of her intemperate habits. A week before her death she came home one night fully intoxicated. Her neighbors heard the usual family dispute, but did not interfere to check it. Her husband stated that he put her to bed, but denied the use of any violence. Next day he left her, and did not see her again to speak to her until he was summoned to her, just before she died. During the week following the separation, Catherine stayed with friends, who lived at some distance from her home; she complained to them of the abuse which, she stated, she had received from her husband, and especially, accused him of kicking her in the abdomen, in proof of which accusation she showed an ecchymosis near the umbilicus. She seemed none the worse for the alleged assault, however, and went out repeatedly during the week in apparently her usual health. She was not intoxicated at any time in this interval. She was seen walking on the street the night before the symptoms developed which preceded her death. Twenty-four hours before she died she went to bed, complaining of great pain in her abdomen. There was no vomiting; she "spit up some blood." Her abdominal pain was relieved by brisk rubbing over its seat. Fourteen hours after the onset of the illness, a physician was called, who found the woman pulseless, with a pale, cold skin, covered with clammy perspiration. Her mind was clear. She complained of the abdominal pain, and of intense thirst. A hypodermic injection of morphia afforded partial and transitory relief, but the complaints of pain in the abdomen continued until death, the day after the seizure. Her reiterated charges of her husband's violence led to his arrest, and to a medico-legal investigation of the case.

The autopsy was made twenty-four hours after death. The body, which was very fat, had been in an ice-box; there was no sign of decomposition. There was a slight degree of rigor mortis, and moderate lividity of the depending parts. The lids of both eyes showed the changing colors of a retrograding ecchymosis. There was a faint bruise-discoloration on the outer side of the left shoulder, and another, an inch and three-quarters in diameter, three inches to the left of the umbilicus; the color of the latter ecchymosis was a dull brownish-red, and it was evidently several days old. The heart was normal, and the blood was not noteworthy. Both lungs were over-filled with blood, but were crepitant in every part. The bronchial mucous membrane was deeply reddened, and the trachea and bronchi contained frothy blood.

In the abdominal cavity were twenty-two fluid-ounces of thin, red fluid. Beneath the peritoneum of the mesentery, in the entire region behind and below the stomach, between the stomach and the colon, and the liver and the colon; also, along the right flank behind the ascending colon, and over the right kidney, the sub-peritoneal tissues were fully infiltrated with blood.

The pancreas were completely filled with effused blood throughout its extent, but the change was especially marked in its middle part and at its tail. The organ presented a sodden, soft, and slimy appearance, its structure being greatly obscured in the dark, bloody extravasation. Its volume was increased, and its middle part was so soft as apparently to be ready to break down upon the slightest roughness in handling. There was no sign of peritonitis. The bruise on the surface of the abdomen was found to be superficial. The spleen was normal. The kidneys were pale, of normal size, with free capsules. The liver presented the gross appearances of fatty changes; its weight was five pounds and ten ounces; its edges were round; on section, the edges of the incision were markedly everted, and a smear of fat was left on the knife-blade. The stomach, intestines, pelvic viscera, and brain and its membranes were normal.

Case IV. James T. S., aged fifty-five years, a pressman in a wholesale clothing house, was found dead on the floor of his bed-room. He was a man of exemplary habits and unstained reputation, taking an active interest in social and religious affairs. He went to his work as usual in the morning of the day of his death. At about ten o'clock on that morning, he complained of "cramps," which were so severe as to oblige him to desist from his work, and to lie down; presently, he left the store, saying that he would go home. No one saw him entering his house, or going to his room, but between six and half-past six that evening, a friend called to see him, and found him lying dead on the floor of his chamber. The carpet was wet all about him, and an empty tin dipper lay by his knees. The oil-stove was alight on his table, and a tea-cup containing extract of ginger, with water and sugar, was beside it. The body lay on its left side; it was cold when found, and rigor mortis was fully developed.

The autopsy was made at ten o'clock in the morning following the death. Cadaveric rigidity was fully developed, and there was marked lividity of the back and shoulders and sides of the neck. The outer side of the left leg was vesicated from the knee to the ankle, the cuticle being off in large patches.

The heart was normal. The blood was equally distributed in its cavities.

Both lungs were injected posteriorly and inferiorly, the left rather more than the right (post-mortem position). When the stomach and liver were lifted, the tissues outside the peritoneum, at each side of the pancreas, were seen to be fully filled with blood. The pancreas itself was larger than normal, and the entire organ was uniformly infiltrated, from its head to its tail, with recently effused blood; the hæmorrhage was most marked in the central parts. The extravasations extended about two inches on either side of the pancreas into the surrounding tissue. There was a small amount, not exceeding half an ounce, of red fluid in the peritoneal cavity. The spleen was healthy. The left kidney was injected, but showed no other change. Its fellow was healthy in appearance. The gastric mucous membrane presented a few limited patches of redness near the fundus. The stomach contained about four fluid-ounces of thin fluid, giving a strongly marked odor of ginger. The liver was moderately injected, but its structure was normal. None of the other organs or regions of the body gave indications of disease or injury.

To the foregoing cases, another which has come under the writer's observation is added, although it has appeared in another connection.[2] It is reproduced here, because its clinical features are especially interesting, and because a careful microscopical examination of the pancreas failed to reveal the fatty changes

[2] Medical and Surgical Reports of Boston City Hospital. Third Series. 1882. p. 128

which some authors have declared to be a characteristic of this lesion.

CASE V. The patient in this case, a printer, thirty-one years old, of intemperate habits, was seized suddenly with pain which he referred to the epigastrium. Up to the time of this attack he had been in good health. At noon on the day of his death, he ate his usual hearty dinner. The pain of the attack, which began about six o'clock, P.M., was soon followed by nausea and an ineffectual attempt to vomit. Presently collapse supervened; the patient was scarcely able to speak; he fell from his chair to the floor; he was evidently in extreme distress. While in this condition he was seen by a physician who prescribed a stimulant (hot brandy) which seemed to produce a temporary reaction and relief. The patient died a few minutes later while in a carriage on his way to the hospital, in less than forty-five minutes after the seizure.

The autopsy was made nineteen hours post-mortem. The body was that of a man in apparently vigorous health at the time of his death, and showed no excess of adipose tissue. The heart was moderately enlarged and the left ventricle was dilated. The muscular tissue of the organ was of good color but was quite friable. The intima of the aorta showed the products of a former endarteritis. The blood was liquid and of dark color. Both lungs were injected and the upper portions were moderately œdematous. The bronchial mucous membrane was thickened and reddened and was covered with muco-purulent secretion. The kidneys and spleen were injected. The pancreas was normal in size, shape and position. The organ itself and the retro-peritoneal connective tissue adjacent to it were infiltrated with blood — not to a degree to form a free clot at any point, but involving nearly two-thirds of the body of the organ and spreading above and below to the distance of about an inch in each direction. The hæmorrhage was most abundant at about the centre of the pancreas; section of its substance found the interior deeply stained of a dark red color by the blood effused in the interlobular tissue. The splenic artery was enlarged and tortuous; its intima was rough and had a velvety or finely granular appearance. The muscular tissue outside the peritoneum and connective tissue was of healthy appearance and wholly free from blood-staining. The intestines and stomach were normal; the latter organ contained a quantity of half-digested food. A microscopical examination of the pancreas, made by Dr. W. F. Whitney, found the interlobular tissue infiltrated with blood which had permeated among the cells in many places; here the corpuscles were destroyed. The cells themselves were very granular, but osmic acid failed to show the presence of fat in them.

As already intimated, these notes have as their purpose the illustration of an unusual and hitherto rarely recognized form of sudden death. They do not pretend to demonstrate or sustain any particular theory of the actual cause of death in these cases, but rather they are offered as evidence of the fact that sudden death may and does occur with pancreatic hæmorrhage as the single important anatomical lesion revealed in the course of the pathologist's inspection. The true pathology of these hœmorrhages, why they occur, and how, when occurring, they kill their subject so quickly, — these are still unsettled questions; it is permitted to indulge in speculation touching this important part of the subject, but much more investigation and close anatomical study are needed before demonstration takes the place of guessing. It is clear that the fatal issue does not rest on the hæmorrhage alone, the amount of blood lost being generally insignificant; but whether, as Zenker suggests, the mortal blow comes through the sympathetic nerve, the semi-lunar ganglion receiving a sudden and violent shock in consequence of the outflow of blood in its immediate neighborhood; or the death is by general shock because of the rapid hæmorrhagic distention of an organ whose tissues are not readily distensible; or the hæmorrhage is simply an incidental accompaniment, or symptom, of some hitherto unrecognized lesion of the central nervous system; or nutrition is impaired in the pancreas, and its vessels are weakened, by the growth of fat-tissue and its pressure on the blood-vessels, causing at length a necrosis of the interlobular portions of the glands,— the writer does not undertake to be dogmatic in deciding. Each view has great obstacles in the way of its acceptance, because all cases observed do not harmonize with it. The histological condition of the pancreas incidental to such cases needs farther elucidation especially.

More cases, too, are needed for the study of the subject on its clinical side. At present, our knowledge of the symptoms is quite limited. They are comprehensively summarized by Prince as follows:[4] "The patient, who has previously been perfectly well, is suddenly taken with the illness which terminates his life. . . . When the hæmorrhage occurs, the patient may be quietly resting or pursuing his usual occupation. The pain which ushers in the attack is usually very severe and located in the upper part of the abdomen. It steadily increases in severity, is sharp or perhaps colicky in character. It is almost from the first accompanied by nausea and vomiting; the latter becomes frequent and obstinate, but gives no relief to the pain. The patient soon becomes anxious, restless and depressed; he tosses about and only with difficulty can be restrained in bed. The surface is cold, and the forehead is covered with a cold sweat. The pulse is weak, rapid, and sooner or later imperceptible. The abdomen becomes tender, the tenderness being located in the upper part of the abdomen or epigastrium. Tympanites is sometimes marked. The temperature in most cases is either normal or below normal. The bowels are apt to be constipated. These symptoms continue without relief; those which are most striking being the pain, vomiting, anxiousness, restlessness and the state of collapse into which the patient soon falls."

In this brief memorandum of an interesting and rare form of sudden death, no mention has been made or reference intended concerning any class of cases other than such as may properly come within the designation of pancreatic apoplexy. Other instances in which the patient survives the first shock of injury to the pancreas and dies as the result of secondary processes (gangrene, peritonitis), or in which there are well-marked organic changes, either in the pancreas or organs adjacent to it, to explain the hæmorrhage, are intentionally omitted from present consideration.

The English Journals are calling attention to the immorality associated with the practice of massage in many of the establishments for that purpose.

[4] Boston Medical and Surgical Journal, vol. cvii, p. 55.

A CASE OF PNEUMOTHORAX.[1]

BY J. F. A. ADAMS, M.D., PITTSFIELD, MASS.

The interesting features of this case are that it was a simple pneumothorax, of peculiar origin, persisting for five years and terminating in spontaneous recovery.

A man, aged forty-six, of American birth and parentage, widower, carriage-painter by trade, was admitted to the Pittsfield House of Mercy as a patient, February 3d, 1881. The previous history of the case, as learned from his own statements, is as follows: Two years previously, having, up to that time enjoyed perfect health, he took a severe cold and was attacked with what was called by his physician "pleuro-pneumonia" of the left side. After being ill, as he thinks, about three days, while straining at stool, he was suddenly attacked with dyspnœa, which had continued without relief up to the time of admission. Two or three days after the dyspnœa commenced, he began to cough and had coughed ever since, usually without expectoration. He had lost appetite, flesh and strength, but had not been confined to bed. A few weeks before admission he was examined by Dr. F. K. Paddock, who found tympanitic resonance and absence of respiratory sounds on the left side. He then consulted Dr. Austin Flint, Sr., who, in a letter to Dr. Paddock, gave a guarded diagnosis, but suggested that the obstructed respiration might be due to pressure upon the left primary bronchus by an aneurism of the aorta; though no physical signs of aneurism were discoverable, and this diagnosis was made only by exclusion.

On admission, he came under the care of Dr. Vermilye, who found him feeble and haggard, with a small and compressible pulse of 86. No pain in the chest, but considerable dyspnœa, especially on exertion. Left chest tympanitic on percussion, with an entire absence of respiratory murmur. He was treated with potassium iodide in five-grain doses, with quinine and iron.

A month later, a faint vesicular murmur could be heard over a limited area of the upper portion and front of left chest, and pain was felt in the same region. Otherwise his condition was unchanged. The iodine was continued till June 1st, a period of four months, after which he took grindelia robusta for two months, neither remedy producing any apparent change in his condition.

On October 6th, eight months after admission, he was examined by myself, and the following record made:—

Left semi-circumference of chest 17 1-2 inches.

Right semi-circumference of chest 16 1-2 inches.

Extreme expansion 3-4 inch.

Expansion of left side 1-4 inch.

Expansion of right side 1-2 inch.

Intercostal spaces fuller on left side than right, and palpation shows left side nearly immobile during respiration. Left side of chest everywhere tympanitic, about equally so over all portions. The tympanitic resonance in front extends to the right margin of the sternum. Cardiac dulness entirely to right of sternum, extending from its right margin to a line one inch to right of the right nipple, and from the third to the sixth rib. Apex-beat close to the right edge of sternum at level of sixth rib. Vesicular murmur heard very faintly over a very small area on left side, at the level of axilla, both in front and behind. Elsewhere, on the left side no sound whatever can be detected. On the right side, respiration is normal. No aneurism or murmur can be detected. Patient still suffers with dyspnœa, which is constant, even when at rest, and excessive on exertion. He complains of a feeling of weight or oppression in the chest, especially at the upper part, amounting sometimes to pain. Pulse 80, soft and weak. Is still feeble and has not materially changed since admission. Has an occasional dry cough.

This patient became a permanent resident at the House of Mercy, remaining there for nearly four years. For three years there was but little change in his condition. He was examined from time to time by myself, as well as by several others of the attending physicians, and the physical signs were found unchanged. He was debilitated, but not confined to bed, went out in good weather and spent his time in reading and acquiring the art of stenography. For treatment he had only tonics and general good care. He left the Hospital for six weeks in February and March, 1883, thinking himself able to go to work, but returned with a severe attack of bronchitis on the right side. This soon passed off, and no change took place until about March 1st, 1884.

At this time he noticed that he could feel the heart beating at a point a little to the left of the position it had so long occupied; and thereafter he was conscious of a gradual progress of the apex-beat toward the left, until, by the latter part of May, he could feel it in its normal position, the change having taken place in something less than three months. As the heart moved, the dyspnœa gradually diminished, and he soon began to regain flesh and strength. I was away at the time the change occurred, and did not examine him until the 25th of the following September, when his condition was as follows:—

Resonance on percussion normal and equal over both sides of chest. Vesicular murmur is now heard in its normal situation, over both sides, the only difference being that it is not quite so loud and strong on the left, where it has also a slight tremulousness or cog wheel character. Apex-beat of heart is found one and one-half inches below and one inch to the left of the left nipple, being six inches in a direct line from its former position. Area of cardiac dulness somewhat greater than normal. He is now able to walk at a brisk pace without dyspnœa.

He remained at the House of Mercy till January 1, 1885, when he was discharged well. Since then he has enjoyed good health, and has been able to earn his living as a stenographer. His normal weight before this illness was one hundred and forty-five to one hundred and sixty pounds. While at the House of Mercy he weighed one hundred and twenty-five pounds, increasing to one hundred and forty before his discharge. His present weight is one hundred and eighty. He writes me that he has no cough, dyspnœa, nor pain in the chest. He still feels the apex-beat to the left of the nipple.

The diagnosis of pneumothorax in this case was based upon the following symptoms:

First. Uniform tympanitic resonance over the left chest.

Second. Distension of the affected side.

Third. Absence of all respiratory sounds.

[1] Read before the Berkshire District Medical Society, September 29th, 1886.

Fourth. Displacement of the heart.

The only question could be between this and a unilateral, pulmonary emphysema, but in emphysema we never get the absolute stillness which characterized the affected side in this case, but have, on the contrary, a prolonged and sibilant expiration. In emphysema, also, the tympanitic resonance varies in intensity over different portions of the chest; displacement of the heart, if it occurs, is not excessive, and the character of the dyspnœa is not the same, being distinguished by the long and laborious expiration. In this case the dyspnœa was simply a shortness of the breath, without laborious expiration; it was constant, and aggravated by exertion, while in emphysema there is a paroxysmal tendency.

In seeking for the cause of this attack, we have for a guide only the patient's statement that the dyspnœa came on suddenly, while straining at stool, after suffering for three days with what was called pleuro-pneumonia. This indicated that the pleura, ulcerated or softened by inflammation, was ruptured by the effort of straining, allowing air to escape into the pleural cavity. It is quite possible that the patient's memory was not accurate as to the number of days which elapsed between the onset of the inflammation and the appearance of dyspnœa. The long persistence of the difficulty indicated that the orifice remained open, for, had it closed, the air in the pleural cavity must soon have been absorbed, allowing the lung to expand, and the heart to return to the left side. It is also evident that the orifice was valvular, allowing air enough to escape into the pleural sac during inspiration to keep up the tension, and preventing its return during expiration. This is the reason that amphoric respiration was not heard, there being no free communication between the lung and the pleural cavity. The lung remained collapsed about its root, allowing a very faint vesicular murmur to be heard at the level of the axilla.

No effusion was found at any time while the patient was under observation at the House of Mercy. Had this occurred, it would have been recognized at once by dulness at the base, changing its location with change of position, and by the presence of metallic tinkling. Whether or not effusion had occurred at any time during the previous two years cannot be positively determined. The physician who attended him in the initial attack discovered none, so the patient thinks, but another, now deceased, who subsequently treated him for a time, told him he had hydrothorax. It is possible to question the correctness of this diagnosis, for it sometimes happens that the intensely tympanitic resonance is mistaken for dulness, and this doubt is strengthened by the subsequent existence for three years of air without fluid. As the attack was evidently inflammatory at the outset, it is very remarkable if the pneumothorax was unaccompanied by effusion; but it is no less remarkable if effusion took place, and the fluid was subsequently absorbed, leaving the cavity full of air, but one or the other of these phenomena must have occurred.

Although hydro-pneumothorax is by no means uncommon, ninety per cent. of the cases resulting from tuberculous ulceration, simple pneumothorax is rare. Flint relates one case in his own experience, and refers to another reported by Gairdner. In both these cases there was a rupture of the pleura by the strain, without previous inflammation. In Flint's case, the strain was due to carrying a pack on the back, the patient being a peddler. Another case without effusion has been reported by Dr. F. C. Shattuck, resulting from a stab in the chest. This was reported at a meeting of the Boston Society for Medical Improvement, on December 8, 1884, on which occasion Dr. Lyman exhibited three cases of hydro-pneumothorax — one traumatic, the second phthisical, and the third of pleuritic origin.

The duration of this case is exceeded by one reported by Laennec, which persisted for six years, but, with this exception, exceeds any which I have been been able to find.

As regards the treatment of this case, there is but little to say, for it received very little. The medicines which were administered during the first few months he was in the hospital had no appreciable effect, and he afterwards took none but tonics. Every effort was made to improve his general health, and an exception to the rules of the house was made in his case by permitting him to remain for so long a time, in order that he might avoid work and exposure. The propriety of removing the effused air by paracentesis was considered at various times, but was not resorted to, because it was believed that removing the pressure from the lung would only tend to delay the healing of the orifice, and it was not thought worth while, for the sake of a very temporary relief, to postpone the recovery.

The position habitually assumed by the patient during the fifteen months prior to his recovery may have perhaps exerted some beneficial influence. As already mentioned, he occupied himself with acquiring the art of stenography, and, during these latter months, spent ten or twelve hours a day in writing. While so engaged, the left foot was placed upon a stool, which raised it about eight inches from the floor, and the left elbow rested on the left thigh. This position would tend to reduce the action of the respiratory muscles of the left chest to a minimum, and thereby prevent the forcible suction of air into the pleural sac. This would keep the valve of the pleural orifice at rest, and give its edges an opportunity to unite. The position was assumed by the patient because he found it very comfortable and restful, and very likely it answered the same purpose to some extent, as strapping the affected side, or fixing it with a plaster bandage, both of which have been recommended in such cases, the latter by Dr. F. T. Roberts, who has employed it with much benefit at the Brompton Consumptive Hospital.

REPORT OF PROGRESS IN ORTHOPEDIC SURGERY.[1]

BY E. H. BRADFORD, M.D., AND R. W. LOVETT, M.D.

DIRECT SURGICAL INTERFERENCE IN CERVICAL CARIES.[2]

Podres, in a case of severe cervical caries occurring in a child eleven years old, with evidence of deep abscess, made an incision two inches long, parallel to the posterior border of the sterno-cleido mastoid through the skin and fascia, and using a blunt instrument followed up the brachial plexus; pus was found on the sixth and seventh cervical vertebra, which were superficially ulcerated. The abscess wall and diseased bone were curetted and iodoform rubbed in, an antiseptic dressing applied with an extension for the head.

[1] Concluded from page 376.
[2] Centralblatt f. Chirurgie, No. 32, 1886.

After six months the patient had improved to a marked degree, but a fistula remained, which was dilated and the diseased bodies again curetted, after which the patient improved rapidly and remained at date apparently entirely well.

DEVIATION OF THE NASAL SEPTUM.[3]

This distortion is very common. Cozzolino found a straight septum only in twenty-one per cent. of all skulls examined. In a majority of cases the left cavity was narrowed by the projection of the septum. If the deviation is slight no trouble is occasioned, but in severe cases chronic rhinitis results. Correction can be effected by dilators, by ivory or hard-rubber plugs, worn for some time. Cotton tampons (in traumatic cases). Bony projections should, according to Hubert, be cut off by the galvano cautery, the turbinated bones partially separated from the septum and flattened down by cotton tampons and a specially devised compressor.[4]

INFECTIOUS OSTEOMYELITIS.[5]

Rodet claims to have identified the specific virus and demonstrated it by experiments on animals — injecting in the peritoneum, under the skin and in the veins — orange-colored coccus and osteomyelitis pus. Intra-venous injections gave the most marked results, causing two days after injection into the jugular, swellings in the different bones and joints, which on subsequent examination was found to be occasioned by a rarefying osteitis with suppuration, the formation of sequestra and in some instances separation of the epiphysis. The bones, as a rule, were the only tissues affected, though exceptionally the kidneys were found diseased. The bones most frequently affected were in the following order: the lower end of the femur, the upper end of the humerus of the femur and tibia.

SHOULDER-JOINT DISEASE.

The question of the treatment of this affection was discussed by Dr. Gibney before the New York Orthopædic Society. He first quotes from various authors to show the consensus of opinion as to the advisability of passive motion to the rigid joint either with or without the use of ether. He then relates two cases of false amchylosis after ostitis where restiffening took place after the application of force and where harm seemed to have been done. He closes by asserting that passive motion is not called for in chronic ostitis of the shoulder or chronic rheumatic periarthritis where the adhesions are extensive.[6]

SPINA BIFIDA.

The cure of a case of spina bifida by extirpation of the sac is described. There was a nut-sized tumor in the lumbar region, and although the child was two years old it had never walked and had double club-foot from spastic muscular contraction, as well as incontinence of urine and fæces. Tapping relieved these symptoms but caused inflammation of the sac, and a radical operation was decided on. The sac was slit and freed from its attachments around the hole in the vertebræ. It was sutured and put back into the canal and the transverse processes of the vertebræ opposite the cleft were broken, bent in, and sutured in the median line. The child recovered at once from its incontinence and its club-foot, and now runs about all day. The cicatrix is hard and firm.[7]

Morton[8] announces two more cures of spina bifida by his injection method. In one of them by Dr. Strain of Rio Janiero, three operations were necessary; at the third there was no fluid, and in fifteen months there was a firm cicatrix.

HOME-MADE APPARATUS FOR POTT'S DISEASE.

Under this title Dr. C. F. Taylor[9] describes a new and very cheap supporting brace which can be manufactured in any house and which accomplishes very much the same ends as the steel brace which bears his name. A piece of ordinary blotting-paper about the size and shape of the muslin part of a vest is impregnated with shellac and moulded, to the back of the patient. It dries and is removed and on it is built up a shell of alternate layers of linen prepared with glue and blotting-paper with shellac. The completed shell is light, firm, and very durable. Buckles are added and the apparatus is used with the ordinary Taylor apron. Its chief use will lie, of course, among people unable to afford a steel brace and in places where it is impossible to have access to a surgical instrument-maker.

ENGLISH ORTHOPEDICS.

A very good idea of the English orthopedic surgery of to-day may be gleaned by reading the article of Mr. Fisher[10] on that subject in the last volume of "Ashurst's International Encyclopædia." He first takes up the subject of club-foot, discusses its ætiology, and accepts the view that it is the result of a disordered nervous influence resulting in "a spastic muscular contraction." The treatment advised for all forms of club-foot is tenotomy followed by the use of the clumsy Scarpa's shoe. The author seems wholly ignorant of the existence of American ideas or American apparatus.

In the treatment of the deformities in rachitis he advises that manipulation should first be tried, to be followed by mechanical support and operation in the order named.

Lateral curvature is fully and clearly discussed, and the author expresses his belief in faulty positions as the ætiological factor in most cases. The first pathological change he believes to be in the ligaments and intervertebral discs. The treatment should be hygienic, gymnastic, and mechanical, for which purpose the very clumsy apparatus of Mr. Adams is advocated.

BONE DRAINAGE IN HIP JOINT DISEASE.

Mr. Stoker[11] comes forward as a very warm advocate of this method of treatment, originally proposed some twenty years ago by Kirkpatrick. His classification of hip disease is into three varieties, femoral, acetabular, and arthritic. He asserts his ability to diagnosticate between these three forms, and advocates the use of bone drainage only for the kind which begins in the femur. An incision is made down to the great trochanter, and a half inch trephine hole is bored as deep as the trephine will go. The site of the hole is at the lower anterior part of the exposed surface of the trochanter. He claims that such a pro-

[3] Centralblatt f. Chirurgie, p. 631, No. 37, 1886.
[4] Also Centralblatt f. Chirurgie, 1882, p. 243.
[5] Revue de Chir., 1885, Nos. 4 and 8.
[6] Philadelphia Medical News, 1886, xlviii, 479.
[7] Wien Med. Wochenschrift, 1886, 7, p. 66.
[8] Lancet, July 17, 1886, p. 147.
[9] New York Medical Journal, September 4, 1886.
[10] International Encyclopædia of Surgery, Vol. vi, 1001.
[11] Dublin Journal, 1886, s. 3, p. 81, 285.

ceeding is calculated to afford drainage and to remove the products of disintegration. He advocates the earliest possible operation, and considers rest to the limb as an important adjunct to the treatment. He would apply it as routine treatment to every case of femoral hip disease coming in his way, even after disintegration of the joint.

EXPERIMENTAL TUBERCULOSIS OF BONE.

Müller contributes some most interesting experimental results on the production of bone tuberculosis in animals. Starting with the assumption that the blood current was the channel of infection he injected tubercle bacilli into the femoral artery in sixteen rabbits; no available results followed. Then he repeated the injection, this time into the crural artery, from which the nutrient arteries of the bone arise. In ten rabbits killed from six to eight weeks later two showed localized tubercular disease, one a deposit in the marrow of the shaft, the other, miliary tubercles in the tibia and femur and a small cheesy deposit in the tibia. Next the nutrient artery was alone injected by means of a subcutaneous syringe needle. Two dogs, five sheep, and twenty goats were injected in this way. The dogs and sheep gave no positive results, whereas the goats were affected with bone lesions much like those in man. Alterations in the shafts of the bones were commonest; a circumscribed cheesy or granular deposit in the marrow or cortex, on more or less diffuse tubercular osteomyelitis with or without sequestration, also typical foci without perforation of the joint.

One goat lived fifteen months, the wound healed in eight days; in four months he began to limp, and swelling of the knee-joint began. After thirteen months he was killed and the knee showed a typical tubercular fungus disease of the joint, a large tubercular focus in the condyle of the femur, and a wedge-shaped sequestrum near it. There were also three other deposits in the lower end of the femur. Except in the popliteal glands no other tubercular deposit was found.

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REPORT ON THE PROGRESS OF DERMATOLOGY.

BY G. H. TILDEN, M.D.
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SYMMETRICAL GANGRENE.[1]

THE forms of gangrene designated by the term "symmetrical" are to be considered as definite varieties of spontaneous gangrene. Spontaneous gangrene or necrosis of tissue due to internal, as distinguished from external causes, is dependent either upon pathological changes in the bloodvessels, upon disturbance of the nervous system, or upon defective constitution of the blood itself. The opinion of most authors is that so-called symmetrical gangrene is usually due to changes in the nervous system. The writer attempts to show, however, that although in most of these cases disturbance of the nervous system constitutes one factor in the production of gangrene, there occur instances in which some defect in the constitution of the blood can not be excluded as a cause. "Symmetrical gangrene," therefore, is to be regarded merely as a symptom which may be due to very different pathological conditions. Most of the concomitant symptoms in cases of "symmetrical gangrene" are caused by the pathological conditions which lie at the root of the matter, and this accounts for the various pictures presented by different examples of this disease. The writer groups the various possible causes of symmetrical gangrene as follows:

(1) Various disturbances in the general nutrition of the body. To this class belong those cases in which symmetrical gangrene appears after excessive bodily exertion, or in young persons of chlorotic and chloro-anæmic tendencies, or after chronic inflammatory processes and acute febrile infectious diseases.

(2) In not a few cases of symmetrical gangrene, hysteria is to be regarded as a cause.

(3) Symmetrical gangrene can also be a symptom of neuritis. Causes of the latter condition are injuries and "catching cold."

(4) Finally, disease of the brain and spinal cord may be the cause of the development of symmetrical gangrene.

Necrosis of tissue dependent upon temporary disturbance of nutrition or caused by acute neuritis, offer the best chances of recovery. Much more desperate is the outlook in those cases which are due to degenerative changes in some part of the nervous system.

The local treatment of tissues threatened or invaded by gangrene, consists in the application of dry warmth, electricity and irritating salves. After necrosis has been established it is to be treated on general surgical principles. The general treatment, of course, varies in each case, being determined by the pathological condition to which the gangrene is supposed to be due.

[1] Hochenegg. Wiener Med. Jahrb, 1885.

ACUTE MULTIPLE GANGRENE OF THE SKIN.

Doutrelepont[2] gives the account of an interesting and unique example of this affection. A strong and healthy unmarried girl, twenty-one years of age, who had never before suffered from any cutaneous disease, ran a needle under the nail of the left thumb, which was allowed to remain several days before being removed. On the day after the infliction of this injury there appeared the first symptoms of a subsequent and long-continued illness in the shape of small gangrenous spots in the skin. The back of the left hand was the first region affected in this way, but afterward the forearm and shoulder, then the upper arm and back, of the same side became also involved. It was a little over two months from the beginning of the disease before it overstepped in its distribution the middle line of the body. Within eight months from this time, however, the sacral region, the breast, the abdomen, both lower extremities and the right arm were all invaded by the gangrenous process which ultimately, over a year after it first appeared on the left hand, showed itself also on the face and head. During all this time the progress of the disease was not an uninterrupted one, but there occurred periods of a month or two, during which no cutaneous manifestations were developed. Each new outbreak of the eruption was generally preceded by an evening rise in temperature, which ceased only with the full development of the eruption.

The symptoms of the disease were as follows:

Either with or without the previous development of temporary cutaneous hyperæmia and with a sensation of painful pricking in the affected regions, there appeared oblong or rounded patches of a whitish-gray color and obscure contour, each patch being apparently composed of a group of smaller sized and rounded lesions. These patches varied from one to four centimetres in diameter, were not raised above the cutaneous level, and neither vesicles, papules nor pustules were ever developed in connection with them. Shortly after the appearance of these patches there was formed at their edges a line of demarkation separating them from normal skin, and surrounded in its turn by a narrow band of encircling hyperæmia. These gangrenous islets of skin then assumed a greenish-yellow color and were gradually cast off, leaving behind a shallow ulceration which presented small anæmic granulations and healed but slowly. Occasionally and more especially toward the end of the disease, healing took place underneath the necrosed tissue before the latter was cast off. The pathological process was confined to the skin, and at no time involved the subcutaneous tissues. Most of the cicatrices resulting from these losses of cutaneous tissue became keloidal, and it was only during the later periods of the affection that this tendency to the formation of false keloid disappeared. During the whole course of the malady, the patient, with the exception of the febrile attacks above mentioned, was in good general condition, the appetite and powers of digestion being unimpaired. The menses, however, were irregular and intermittent. Her only complaints were directed against the localized pains which preceded and accompanied the cutaneous manifestations and the chronicity of the latter. The sensitiveness of the skin and the tendon reflexes were always found to be normal, and there was never any enlargement of the lymphatic glands.

None of the various drugs administered, among which were arsenic, iron, salicylate of sodium, corrosive sublimate and quinine, appeared to have the slightest influence upon the course of the malady. The use of antipyrin, however, was found to control the evening rises of temperature, while the external application of a solution of corrosive sublimate $1\frac{0}{00}$ in strength, seemed to prevent the development of keloid, which did not take place after its use.

Examination of blood taken from these cutaneous lesions and cultivation experiments with the same and with bits of diseased tissue, demonstrated the absence of micro-organisms. Histological examination of portions of skin taken from the diseased regions, confirmed the clinical assumption that these cutaneous lesions, namely, the gangrenous patches, were composed of small, round efflorescences which were surrounded by normal skin. The initial pathological process was found to be an early stage of inflammatory vesicle formation, which by reason of quickly occurring cutaneous necrosis, did not reach a grade of development sufficient to render it clinically evident as such. These vesicles were always in circumscribed groups and were developed "en bloc," that is, all of the vesicles included in any given group were formed at once, there being no successive development of vesicles in any group. These are among the clinical characteristics of herpes, and the disease in this instance is regarded by the author as multiple, bilateral, and chronic herpes zoster, its full clinical development being prevented by the rapidity with which the gangrenous supervened upon the herpetic process, the case presenting many analogies with the variety of zoster described by Kaposi[3] as herpes zoster gangrenosus recedivus.

TROPHONEUROSES OF THE SKIN.

Kopp[4] gives the following conclusions as the result of a careful study of the "relations of the nervous system to diseases of the skin":

(1) It may be regarded as proven that the nervous system, under normal conditions, exercises a controling influence over the nutrition of the various tissues which go to make up the skin, and that organic and functional alteration of the central and peripheral nervous system may have, as a result, disturbance in the normal nutrition of tissue, irrespective of any vasomotor disturbance. Our knowledge with regard to the minute details of these processes is incomplete, but in general, it may be assumed that mere cessation of innervation gives rise to atrophic processes, while irritation of the nervous system is more apt to cause dysprophic processes in the tissues affected.

(2) Reasoning by analogy from processes of innervation, as exhibited in other parts of the nervous system, it is most probable that this trophic influence is exercised by certain ganglion cells, and groups of ganglion cells situated in the central nervous system, a normal condition of these cells being necessary to the normal production of nutrition. Nothing positive, however, is known concerning the exact situation of these trophic centres. Those which govern cutaneous

[2] Vierteljahresschrift für Derm. u. Syph., 1886, 2 Heft, p. 178.

[3] Wiener Med. Wochenschrift, 1874, Nos. 25, 26 and 38, 1876; Nos. 1 and 2, 1877; Nos. 25 and 26, and Vierteljahresschrift f. Derm. and Syph., 1882, s. 542.

[4] Die Trophoneurosen der Haut, etc., von Dr. Carl Kopp. Wien., 1886, Verlag v. Wilhelm Braumüller.

nutrition are probably situated in the posterior regions of the spinal cord, although there is also some reason for assuming that they may exist in the ganglia of the posterior nerve-roots.

(3) There are not sufficient grounds for assuming the existence of special nerve fibres devoted to the transmission of trophic influence, and it is more probable that this peculiar influence is transmitted by means of the ordinary nerve-fibres.

(4) There are but few affections of the skin which can be regarded as uncomplicated trophoneuroses. There are hemiatrophia facialis progressiva, atrophia cutis circumscripta neurotica, possibly vitiligo, herpes zoster, pemphigus, scleroderma, and the anomalies of cutaneous secretion.

(5) Most of the other cutaneous affections usually regarded as trophoneurotic in origin are to be regarded rather as the result of several different processes, among which trophic disturbance plays a more or less important part. In general, as a consequence of disturbed trophic influence, is to be assumed a diminished capacity of tissues to resist insult and pathological changes; nevertheless, there also occur instances in which the trophic influence seems to be stimulated, and thereby the capacity for resistance and growth of tissue is temporarily, at least, increased.

(6) The essential reasons for the assumption of a trophic influence which resides in the nervous system are derived from clinical observation; efforts to induce uncomplicated trophoneurosis of tissue by means of experimental pathology have hitherto been fruitless, and anatomical knowledge with regard to the subject is scanty, and requires further investigation.

UNILATERAL CUTANEOUS PRURITUS OCCURRING AFTER EMBOLISM OF THE BRAIN.

Professor Köbner[5] exhibited in his clinic an unusual case, in which intense pruritus and complete anidrosis ensued after hemiplegia, caused by embolism of the brain. The pruritus and anidrosis were confined in their distribution to the left side of the body, which was paralyzed. The skin was entirely normal in appearance, showing no evidence of disease, except the mechanical injuries inflicted by the nails of the patient in her endeavors to relieve the itching, which was continual, and so severe as to deprive her of sleep.

Köbner said that he had never met with a similar case, either in his own experience or in literature, and confessed his inability to offer any satisfactory explanation. The usual causes of pruritus not due to pathological changes in the skin, that is, of so-called nervous origin, exist either in the skin itself, as in pruritus senilis, where, by reason of senile atrophy of the cutaneous tissues and glands, there ensues cutaneous irritation; or in the internal organs, such as disturbances in the female generative apparatus, and in the alimentary canal; or else in abnormal changes in the constitution of the blood, such as occurs more especially in cases of icterus, diabetes, and Bright's disease, where, by reason of the presence of foreign materials in the blood, there occurs irritation of the cutaneous nerves. Nothing of the kind was found to exist in this case, the skin being entirely normal, with the exception of the diminished secretion of the sweat-glands. The pruritus seemed to be due to trouble in the central nervous system, being somewhat analogous to those cases of general pruritus occasionally met with in connection with various forms of insanity. The treatment, which was found quite efficacious in modifying the violence of the pruritus in this instance, was the inunction, twice a day, of a salve composed as follows: chloral hydrat., camphor. trit. aa 5.00, and vaseline 50.00.

[5] Berliner Klin. Wochenschrift, July 27, 1885.

Clinical Memorandum.

TWO CASES OF OBSTETRIC INTEREST.

BY ALFRED HOSMER, M.D., OF WATERTOWN.

CAN UTERINE HÆMORRHAGE BE PRODUCED BY RENAL DISEASE?

MRS. —— died late in the month of January, 1886, at the age of fifty-seven. An autopsy was made within forty-eight hours. The external bulk of the heart was found to be very much increased. The walls were very thin, and the cavities much dilated. The muscular substance was tolerably firm. The kidneys were in the second stage of Bright's disease. The body of the uterus presented nothing very striking in its general form and size, or in the quality of its tissue. Its special abnormal features were as follows: the cervix showed considerable cicatrical tissue, and scarcely projected into the vagina. The os was a small circular opening, with quite a sharp edge, resembling a hole punched in a thin membrane. It did not represent the termination of a cylindrical canal, but rather the entrance into a cavity of very irregular shape. Two or three small patches of capillary hæmorrhage were found on the internal uterine surface. Within the wall of the organ, high up on the right side, there was a fibroid, measuring almost two cm. in diameter. There were also two very small subperitoneal fibroids low down near the cervix. The diseases of the heart and kidneys had been fully recognized before death; but the condition of the womb, with the exception of the loss of the vaginal cervix, had always been an unsolved question. This was due in part to the fact that the conformation of the patient rendered it absolutely impossible to obtain a satisfactory touch or exploration with the sound. Even firm pressure made upon the hypogastrium, failed to depress the uterus appreciably. The tonic conformation is not intended to suggest any pelvic deformity. Physically, the patient was a large woman, with decided tendency to corpulence; hence the difficulty of pelvic examination. Her circumstances were entirely comfortable. She had borne two children; the younger one a son, born in 1866. Through life she had suffered much from malarial disease, but otherwise had been pretty well. Menstruation had always been a regular function, and when it ceased is quite uncertain. In the early part of 1884, she had suffered for some time from severe pain in the lower portion of the trunk, and had also been subject to copious uterine flow. Her attendant, a female practitioner, advised that a trial of electricity be made in New York city. A very brief experience demonstrated the utter unfitness of that method of treatment, and it was abandoned. The patient then made her way to Philadelphia, where she placed herself under the care of an eminent gynæcologist. By him some operation was performed upon the cervix uteri. It is supposed to have been intended for the relief of an old laceration; although upon this point

no definite information was ever obtained. Having fairly recovered from the artificial illness produced by the operation, assurance was given that, with the exception of some cardiac trouble, she had no organic disease. Her haste to reach home probably induced her to depart somewhat prematurely, and thus to lose an advantage that might have been derived from medical supervision continued a little longer.

My personal acquaintance with the patient commenced with my professional attendance in April, 1884, and the latter continued, with some interruptions, until her death. There were two periods, one of six months, from August, 1884, until February, 1885, and one of five months, from March, 1885, until the following August, during which the patient made no request for medical advice. The history of the case, as I observed it, may be given as follows: Excepting the cardiac disease, which even then was well pronounced, I could discover in the patient, at the time of my early attendance, only an enfeebled condition, for which there seemed to be sufficient reason. Her mind was infected with the theory of "biliousness," and by unwise exertion she was striving to regain the strength she had lost. Before long she was overtaken by a uterine flow, which, together with its repetitions, formed such a puzzling subject of study during the remainder of her life. The interval which separated any two successive hæmorrhages varied from a few weeks to some months. Their duration was never short, and sometimes exceeded a fortnight. The attacks gradually became worse, and the worst of all was the last one, and came on about two months before death. The color of the blood was dark, as I observed it more than once through the speculum, while it issued from the os uteri in a stream of surprising size and velocity.

This recurring symptom of hæmorrhage was treated with rest and precaution, and all the various astringents that therapeutics can suggest, not omitting one of the latest remedies, the rhus aromaticus, of the efficiency of which, in certain cases, I am fully convinced.

As I look back upon the case, with a single glance at the whole of it, I am inclined to believe that, notwithstanding the faithful use of proper drugs by internal administration, the cessation of the hæmorrhage was due every time largely to the principle of self-limitation. Hæmostatics seemed to be false to their names, excepting as they were used locally. If a piece of alum or a wad of absorbent cotton saturated with alcohol were placed high in the vagina against the stump of the cervix, the flow would cease for a while, and be essentially modified for two, three or four days. If during a free hæmorrhage the uterine cavity were wiped out with alcohol, or a small quantity of the liquid were injected into it, the stream of blood would cease for some minutes. There was another effect produced by the alcohol placed in the vagina, and which deserves notice. The passage was contracted and puckered as by an astringent; so that a speculum which was introduced with perfect ease before the use of the alcohol, was inadmissible afterwards. In her latter days the patient suffered extremely from the characteristic nausea and vomiting, and from neuralgia, in the form of severe hemicrania.

I have selected a question for the title of this communication for two reasons: (1) The hæmorrhage was largely in excess of anything that could be expected from, or explained by, the pathological changes found in the uterus. (2) Certain it is that, associated with renal disease, there may be changes in the vascular walls which allow and determine serious hæmorrhages in the cerebral tissue, and copious, even dangerous, epistaxis. May not similar results be observed in other portions of the system?

A FATAL CASE OF URÆMIC CONVULSIONS, OCCURRING AT THE SEVENTH MONTH OF PREGNANCY; THE PATIENT DYING UNDELIVERED.

Late one evening, by a message which failed to imply any urgency, I was summoned to a stranger, then a guest at the house of her sister, and intending to return home on the following day. The case was reported to me as one of indigestion, produced by an apple that had been eaten in the afternoon. Her family had not the least suspicion of the crisis that was rapidly approaching. A very brief inquiry discovered pregnancy in a primipara advanced to the seventh month; headache, defective vision, general œdema, and severe gastralgia. Of course nothing was known of the method of the renal function. The statement that convulsions would soon occur caused much surprise. A nurse was ordered, a full dose of bromide and chloral was administered, but the necessary preparations for the treatment of a grave case were hardly completed when the patient had her first seizure, and that was very far from being a slight one. This was just twenty-six hours before her death. During the first fourteen hours of this period, she had seventeen convulsions; the remainder of the time she lay in a state of complete unconsciousness. Immediately after the first fit I drew the urine, and this was almost at midnight. Although in its general appearance, this urine looked sufficiently well, it contained a large proportion of albumen. During the next six hours, that is, until six o'clock, the quantity of urine secreted was just about one-half of what it ought to have been, and the degree of albuminuria was increased. During the next period of six hours, terminating at noon, the renal function seemed to undergo an almost complete abolition. The urine was extremely small in quantity, and as thick and turbid as chocolate. This brief account includes all the essential features of the case, so far as concerns the course of the disease, and its modes of manifestation. Before detailing the treatment, it should be stated that uterine action existed only as it was induced. There was no sign of spontaneous labor. Bromide and chloral showing no good results, morphine, used subcutaneously, was substituted, with ether upon the approach of a fit. Still later the ether was used by itself, and with great freedom and persistency. When the kidneys were found to have failed so signally in their function, jaborandi was administered by the rectum. It very promptly produced copious diaphoresis, but had not the slightest diuretic effect.

Very soon after assuming the care of the case, and in view of its unusual severity, I attempted, but unsuccessfully, by the method of digital dilatation, to produce labor and to effect delivery. The difficulty reminded me of what I have encountered in the case of tonic spasm of the internal os, and may have depended upon the fact that the cervix, which includes the os, was not in that ripe and mature condition that commonly requires nine months for its full development. My efforts at dilatation covered a period of many

hours; they were hopeful and persevering, and sufficiently energetic. All I accomplished was to force into the os, at once, the fore, middle and third fingers, and not even these in their entire length. When they were finally withdrawn, they were marked with a sharp circular indentation, such as would have been produced by a string tightly drawn. As an adjuvant to this mechanical treatment, a useless attempt was made to soften and relax the unyielding tissue of the obstinate cervix, by throwing upon it a stream of tepid water. At a late stage the difficulty of dilatation was much increased by the condition of the vagina, which became so dry, so hot, and so swollen as to almost refuse admission to the hand.

As a result of the change enforced in the cervix and os, uterine action came on, and the contractions in their force and regularity, were quite satisfactory for a time. For the purpose of maintaining them ergot was used by the rectum. The moribund stage was of unusual length, and many hours before death it became necessary to confess, for this case, the insufficiency of the obstetric art.

Reports of Societies.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

C. M. GREEN, M.D., SECRETARY.

JUNE 12, 1886, the President, DR. A. D. SINCLAIR, in the chair.

DR. HOSMER reported two cases,[1] the first bearing upon the question,

CAN UTERINE HÆMORRHAGE BE PRODUCED BY RENAL DISEASE?

DR. STRONG thought the uterine hæmorrhage was more likely due to the dilated condition of the heart and the consequent passive congestions, than to the kidney: the uterine mucosa becoming hyperæmic, moderate hæmorrhage is the frequent result.

DR. RICHARDSON had noticed that there was more flowing *post partum* in women affected with Bright's disease.

DR. L. R. STONE had also observed the phenomenon.

DR. HOSMER said there was no constitutional cause for the hæmorrhage in his case, that he had discovered. He then reported

A FATAL CASE OF URÆMIC CONVULSIONS OCCURRING AT THE SEVENTH MONTH OF PREGNANCY, THE PATIENT DYING UNDELIVERED.

DR. BLAKE said that in such cases he induced profound anæsthesia with ether, and dilated the cervix with the fingers and delivered: he did not believe in the use of morphia.

DR. SINCLAIR agreed with Dr. Blake, and had never failed in following the method of digital dilatation under surgical anæsthesia. In some cases he would also give calomel and jalap; and would use emollients, when the vagina was hot and dry. He never gave morphia.

DR. HODGDON thought chloroform the best anæsthetic, because it acted more quickly.

DR. C. H. COOK advocated free catharsis.

[1] See page 402 of the Journal.

DR. A. H. JOHNSON spoke of the case of a patient affected with nephritis, who, when near full term, was seized with headache and epigastric pain. Labor soon set in and speedy delivery followed: she then had a convulsion. He used no ether, but gave chloral and bromides, and also a quarter of a grain of morphia. There was no subsequent convulsion. He had carefully considered the question of using morphia in Bright's disease, and was in favor of its use: morphia was said to increase the secretion of urine.

DR. F. W. GOSS was interested in the rapid increase of the renal affection: he had seen cases in which the morbid changes were very rapid.

DR. RICHARDSON spoke of the propriety of bleeding in cases of eclampsia: he had bled in but one case. Dr. Fordyce Barker approved this treatment, however, and bled very frequently. In the cases of post-partum eclampsia which he had seen, he had noticed that there was a greater amount of flowing, and this would of course make further bleeding unnecessary.

DR. INGALLS, in a case of post-partum eclampsia, had bled the patient, and she had but two convulsions afterwards, and recovered: he noticed no undue flowing.

DR. WELLINGTON had seen two cases of hæmorrhage after convulsions.

QUARTERLY MEETING OF THE ESSEX NORTH DISTRICT MEDICAL SOCIETY.

MAURICE D. CLARKE, CORRESPONDING SECRETARY.

THE quarterly meeting of this Society was held at the Brown Square Hotel, Newburyport, October 6th, the President, DR. E. P. HURD, of Newburyport, in the Chair.

The records of the last meeting were read by the Secretary, DR. GEORGE W. SNOW, of Newburyport, and approved.

By invitation, DR. S. K. TOWLE, formerly of Haverhill, but now surgeon at the Soldier's Home, Hampton, Va., addressed the Fellows. He said, among other things, that he missed, in his present practice, the quacks. All his chronic and incurable cases remained with him, and did not give him a desired rest by betaking themselves, as was their habit in private practice, to the quacks. He humorously deprecated, therefore, a possible subsidence of quackery for the sake of the profession.

After a brief discussion upon various phases of the fashionable quackery of the day, DR. A. STABLER, of Lawrence, read the paper of the session, upon

A NEW PORTABLE BATTERY, AND SOME DETAILS OF ITS APPLICATION.

DR. STABLER exhibited a very ingeniously constructed battery of his own devising, and made some remarks upon electro-therapeutics, citing illustrative cases from his own experience, especially in the field of gynæcology. Dr. Stabler's paper was succeeded by a general discussion upon the use of electricity in medicine, and later, upon a variety of subjects.

DR. ENOCH CROSS, of Newburyport, the oldest member of Essex North, now eighty-six years old, and retired from the practice of medicine, was introduced to the Fellows present, and made a few remarks expressive of his gratification at meeting them again.

DR. EDWIN WARREN BULLOCK, of Haverhill, and

DR. ARTHUR AMBROSE SWEENEY, of Lawrence, passed the requisite examination, and were admitted as Fellows of the Society.

Voted, to hold the next meeting at Haverhill, on the first Wednesday in January, and, after dinner, adjourned.

THE NEW YORK ACADEMY OF MEDICINE. SECTION IN NEUROLOGY.

STATED meeting, October 8, 1886.

JULIUS ALTHAUS, M.D., M.R.C.P., of London, read a paper on

SOME POINTS IN THE PATHOLOGY AND TREATMENT OF PARAPLEGIA DEPENDENT ON POTT'S DISEASE,

in which he first gave the detailed history of a case. The patient was a florid-looking girl of twenty, who was employed as a domestic. She had enjoyed good health from early childhood. She had never had any scrofulous trouble, and there was no phthisis in her family. Moreover, so far as she knew, she had never received any injury to the spine. Two years before she came under observation she suffered from an attack of rheumatic fever; but, on recovering from this, she went back to service. Nine months later, however, she began to suffer from severe pain in the right foot, which was soon followed by marked loss of power in the right leg. Eventually this was followed by pain and paralysis in the left leg also. She then became confined to bed, and for a considerable time was treated in a provincial hospital, without any benefit.

When she came under Dr. Althaus's care an examination showed that there was almost complete paralysis from the hip-joint down, on the right side, and less marked paralysis in the left limb. On applying the faradic and galvanic currents, responses were obtained with unusual facility. The superficial reflexes were also unusually brisk; and the same was true of the deeper reflexes, as well. There was no history whatever of spontaneous cramps or of muscular rigidity. There was more or less coldness, lividity and clamminess about the foot and instep. The different forms of sensation in the entire limb were perfectly normal. The left side was in all respects less seriously affected than the right.

A distinct prominence of two of the dorsal vertebræ was clearly recognizable. There was no pain in the spine, and no increase of temperature; but the mobility of the spinal cord was much impaired. The commencement of the deformity, it was ascertained, had been coincident with that of the pain and paralysis fifteen months before. It seemed evident that there was more or less thickening of the spinal dura mater, and that in the cord itself there was interstitial myelitis present. The posterior columns were also implicated, as shown by the neuralgia that had existed for so long; but it was probable that the central portion of the cord still remained normal. She was placed on the iodide of potassium and cod-liver oil, with complete rest, and frictions with liniments, etc.; but at the end of three months no improvement whatever was noted.

At the request of Dr. Althaus, Mr. A. Pearce Gould then made an application of the actual cautery to the side of the spine, and within a few days the patient was perceptibly better. The application was made four times in all, and she continued to rapidly improve. In a short time she was able to walk as well as ever, and the vaso-motor disturbances, shown by the coldness, lividity and perspiration about the ankle, disappeared. The patient was then discharged practically cured, and entered a convalescent home for a time.

Patients suffering from paralysis due to Pott's disease, Dr. Althaus went on to say, had sometimes recovered by the opening of an abscess, and it could not be doubted that the powerful counter-irritation resorted to in this instance had brought about a cure by its effect upon the diseased structures involved. While the pain in the foot and leg had been very marked, there had never been any pain in the back. The former appeared to have resembled the lightning pains of locomotor ataxia. He believed that this pain was due, not to pressure on nerves or inflammation of the dura mater, but to irritation of the posterior columns of the spinal cord. The symptoms of coldness, lividity and perspiration of the foot and instep, showed that there was present some degree of vaso-motor paralysis, and it was plainly caused by central disturbance.

Formerly, it was supposed that paralysis occurring in Pott's disease was due to an actual destruction of the substance of the spinal cord; but if this were the case, recovery, which is so often noted, would be impossible. In many cases, however, the entire cord suffered some amount of pressure, which gave rise to paralysis. Vulpian had shown by experiments on animals that paraplegia could be produced and removed at will by setting up and withdrawing pressure upon the cord; the paralysis being motor in character, with no loss of sensation. But this simple form of paralysis was not all. Charcot and others had shown that there was habitually inflammation of the external layers of the spinal cord. Interstitial myelitis seemed to be always present also. In the case related there could be little doubt that the coarser pyramidal fibres were affected by either myelitis or degeneration, probably the former.

How, continued Dr. Althaus, shall we explain the fact that while there was almost complete motor paralysis, especially on the right side, there was no loss of sensibility? This was a point which had not been hitherto satisfactorily accounted for, and was worthy of careful study. There were three different degrees of pressure upon the cord met with in Pott's disease. In the first there was no pressure exerted upon the actual structures themselves; and all had seen cases in which, while there was considerable deformity, there was no paralysis. The reason for this was, that the pressure was just sufficient to displace the spinal fluid, but it did not extend to the cord itself.

The second degree was that which existed in the case under consideration. Here there was not only displacement of the spinal fluid, but also interstitial myelitis. In those cases of paralysis resulting from Pott's disease, motion was more easily lost than sensation. There was not a single case of the disease on record in which there had been paralysis of sensation without that of motion; while we constantly meet with the reverse of this, paralysis of motion without that of sensation.

The third degree was met with in those cases in which we had to do with complete transverse mye-

litis, implicating not only the columns, but the gray matter of the centre of the cord as well. In connection with this there was found anæsthesia and analgesia, with paralysis of the bladder and rectum and a tendency to bed-sores. In such cases, on account of the profound organic changes which had resulted from the pressure, recovery was impossible. It was important, therefore, that we should resort to the actual cautery at an early period in cases of Pott's disease in which paralysis results, in order to prevent the pathological process in the cord from going on to this advanced stage.

The conclusion of the paper was devoted to some consideration of the actual cautery. Having referred to its history in the past, Dr. Althaus said that personally he now never thought of resorting to it in spastic spinal paralysis, tabes dorsalis, or other disease of the cord proper; but that he had always found it of the greatest service in disease of the membranes.

DR. V. P. GIBNEY said that he had been much pleased with the clinical picture which the distinguished writer had presented, and also with the admirable manner in which he had connected the various symptoms with the pathological conditions present in the case, which was one of great interest. As to the actual cautery, this was not the only means at our command for securing relief to the patient. He had seen a large number of similar cases perfectly relieved within a week, by the simple application of a jury-mast. Some time ago, Dr. Charles J. Poore read a paper in which he related a number of cases in which he was able to report very good results in the treatment of Pott's disease, by the actual cautery. Afterwards, however, he was much disappointed in its use, as the results in other cases were entirely unsatisfactory.

The author of the paper had cited but a single case, and though, in this particular instance, the method was completely efficient, he did not think this was enough to prove it applicable in general. Personally, he believed that the actual cautery was objectionable, and particularly in the case of children. Although it was the present custom to use it very lightly, it was impossible to persuade patients that it would not hurt, and both the mothers and the children objected very strongly to its use. Of course, this objection applied principally to private practice. He thought that, as Dr. Althaus had pointed out, the cases which improved did not belong to the third stage. He had a number of times applied the actual cautery when the very first symptoms of paralysis appeared, however, but without securing any good resuls. When, on the other hand, he had stopped its use, and had resorted to suspension and the application of a jacket, the patients got well. In these cases he was strongly in favor of giving large doses of iodide of potassium — sixty, seventy, or eighty grains, three times a day. The objections to the use of the iodide in adults did not hold good in regard to children, with whom it almost always agreed perfectly, and who often grew fat upon it. With the iodide, and a good jacket to support the spine, he had obtained better results than in employing any other treatment.

DR. SACHS said that he agreed with the author of the paper that interference with motion was much more common than with sensibility. With regard to the treatment, he had no doubt that the actual cautery was efficient in certain cases, and yet in the one related by Dr. Althaus, he was inclined to doubt whether the credit for the cure should be given to this procedure entirely. Thus, in addition, the patient was given complete rest, and treated with cod-liver oil and other tonics. He had seen some cases cured by complete rest alone. The same was true of many cases of chronic myelitis, and he called to mind particularly one case of post-puerperal paraplegia. He did not wish to discredit the treatment of the actual cautery, but it seemed to him that the other measures adopted were of considerable importance in bringing about the satisfactory result noted.

The Chairman, Dr. L. PUTZEL, said he had had a few cases, in which the results were similar to those obtained by Dr. Althaus in the case reported in the paper. In these instances, the improvement was so rapid after the application of the actual cautery, that no reasonable doubt could be entertained as to its efficient agency. In the large number of cases, however, this procedure was entirely without beneficial results. As to large doses of iodide of potassium, as recommended by Dr. Gibney last year, he had found, in his experience, that these also were without effect. He agreed with the last speaker that, after all, time and rest were the most successful remedies. Good feeding, however, was a matter of great importance also. With regard to the absence of anæsthesia in these cases, it seemed to him that the explanation presented in the paper was a very plausible one. It certainly seemed to him to be a fact that there was some quality about sensory fibre which made it resist pressure much more efficiently than motor fibre.

In closing the discussion, DR. ALTHAUS said that the good effect produced by very large doses of iodide of potassium, as claimed by Dr. Gibney, was a very interesting matter, and that on his return to England, it would give him great pleasure to practically test the efficacy of the treatment. It had been assumed that the rest and other treatment, beside the application of the actual cautery, had had much to do with securing the good results noted in the case which he had narrated. But this he believed to be a mistake. For four months in the provincial hospital, and for three months after she came under his own care, the patient had been treated with complete rest in bed, and, in addition, she had been taking cod-liver oil and iodide of potassium, the latter in thirty-grain doses, three times a day. And yet no effect whatever was produced — the patient remained precisely in the same condition. As soon, however, as the first application of the actual cautery was made, a marked improvement in the paralysis commenced, and this rapidly became more and more marked under the repeated use of the cautery. Before resorting to this measure, he had wished to give the rest treatment a thorough test, and as it was attended with no improvement, while from the first the improvement was positive under the use of the cautery, he thought he was fully justified in attributing the cure to this particular agent. There was, no doubt, cases in which the cautery had failed, but it seemed to him that in these instances the disease was probably more advanced. He would like to inquire if there was not some loss of sensibility, as well as motion, in such cases. In conclusion, he said that his reason for bringing this subject before the Section was to induce surgeons to resort to the actual cautery at as early a period as possible.

Dr. Graeme M. Hammond read a paper on

ATHETOSIS, WITH REMARKS ON ITS PATHOLOGY.

In speaking of the treatment, he said that this affection, being dependent on certain irremediable organic changes in the brain, it was impossible even to produce a cure. At the same time, there were certain measures which, in some instances at least, had been attended with marked relief, and sometimes had succeeded in abolishing all symptoms of the trouble for a considerable period. He referred in detail to four cases, one of which, reported by Gowers in 1876, had been treated with galvanism, and the remaining three of which had been treated by nerve-stretching. The most interesting of these was the original case of Dr. Wm. A. Hammond, upon which his description of the disease (which is mainly characterized by an inability to retain the fingers and toes in any position in which they may be placed, and by their continual motion), published in 1871, was based. This patient was also a confirmed epileptic. In 1882 Dr. G. M. Hammond stretched the median nerve very forcibly; after which both the epilepsy and athetosis disappeared for three months. At the end of five months, however, they were as bad as ever. At the time of the operation the nerve was in an apparently perfectly healthy condition. In 1884 the same operation was repeated, and the nerve still appeared normal. After this the patient remained well for about four months, but in eight months was again as bad as ever.

In 1885 the operation was again repeated, and this time the nerve appeared to have lost its healthy character, and after the stretching, instead of promptly rebounding to its position, it hung in a loop outside the wound. The result of the operation, however, has been more satisfactory than either of the others. A year and four months has now elapsed since it was performed, and there has been no return whatever of the athetoid symptoms: the muscles of the hand, arm and foot all being perfectly under the perfect control of the will. The patient, however, still has an occasional epileptic seizure (perhaps once a month), and he is the subject of that interesting feature sometimes characterizing epilepsy, double consciousness. This state of oblivion respecting former events sometimes lasts for four days at a time.

Dr. Hammond said that he believed that nerve-stretching yielded better results than electricity or any other method of treatment in athetosis. He was unable to say precisely how stretching of the median nerve in the arm affected the leg also; but such appeared to be the fact. Such a procedure could, of course, have no effect on the organic changes in the brain giving rise to the athetosis; but he thought that it might perhaps have some effect upon the *corpus striatum*. Dr. Dana had shown that stretching of the sciatic nerve actually stretched the spinal cord as high up as the cervical vertebræ.

Dr. Hammond was able to present the reports of nine autopsies, made by various neurological authorities, in cases in which athetosis had been present during life. In three of these there were well-marked lesions of the corpus striatum, in three, of the optic thalamus, in one or more, of both the corpus striatum and optic thalamus, and in two, of the cortex cerebri. He also referred to a number of authentic autopsies in cases of allied affections, in which the same portions of the brain were the seat of organic disease. His conclusion was, that athetosis and allied affections are due to lesions of the corpus striatum, optic thalamus, and cortex cerebri, and of these parts alone.

Dr. Birdsall said that in order to show that athetosis and allied clonic movements were dependent alone on lesions of the gray matter of the brain, it was necessary to prove that in the condition found at the autopsies referred to the internal capsule was not at all implicated. Athetosis so frequently followed hemiplegia, and especially in children, that it seemed reasonable to suppose that the motor fibres were affected in it.

Dr. Putzel mentioned two autopsies he had seen which bore upon the subject, and which seemed to confirm the position taken by the author of the paper. One was in a very marked case of chorea, of twenty years standing, and the autopsy revealed pronounced atrophy of the central convolutions, with descending degeneration down the cord. The other was in a case of pre-hemiplegic chorea. He was glad to find that the author of the paper had not treated athetosis as a distinct disease, but as an affection allied to chorea, hemi-chorea, etc.

Dr. Hammond explained that the greater number of the autopsies referred to were described with the greatest accuracy, many of them being accompanied with diagrams representing the seat of disease, and that in none of them were motor fibres implicated in the slightest degree.

Recent Literature.

Handbook for the Instruction of Attendants on the Insane. Prepared by a sub-committee of the British Medico-Psychological Society. Boston: Cupples, Upham & Co. pp. 137. 1886.

How to Care for the Insane. A Manual for attendants in Insane Asylums, by William D. Granger, M.D., first Assistant Physician, Buffalo Asylum for the Insane, N. Y. New York and London: G. P. Putnam's Sons. pp. 96. 1886.

If the knowledge and treatment of diseases of the mind had kept pace with that of bodily disorders, the systematic instruction of attendants by special training and by manuals, would have long since been inaugurated. The advance in the care and treatment of the insane has, to be sure, been rapid since the days of Pinel and Conolly, but the early years of ignorance and neglect in this direction remain to be compensated for, before the gains in other branches of medicine can be counterbalanced, and diseases of mind and body placed upon an equal therapeutic footing.

The books before us are nevertheless welcome as harbingers, though late ones, of a happier lot for the insane through the thorough instruction of those upon whom their well-being so largely depends.

The Handbook for the Instruction of Attendants is an attractive reprint from the English publication, a systematically arranged and useful manual. A good deal of ground is covered, including not only the care of the insane, general duties of the attendants and nursing of the sick, but considerable mental and bodily physiology and pathology necessarily of a most elementary kind.

"How to Care for the Insane," goes over the

same ground but in more detail, and though the style is of the plainest, the matter is particularly clear and readable, and well calculated to attract and hold an attendant's interest. Exception must be taken, however, to the introduction of matters purely of asylum administration, such as whether patients shall "sleep in large dormitories or move about in big parties."

There is much in these manuals relating to psychology and physiology that might be omitted. Attendants care most for and remember best the instructions which immediately relate to the details of the care and management of their charges. This information when clearly and fully presented, they read with profit and an eagerness which shows how great has been the need of it. But as we question how far the average hospital nurse is guided in her duties by a knowledge of physiology and pathology, we decidedly doubt the ability of attendants, particularly those in our large public asylums, to understand, to properly apply and to remember the chapters on the nervous system, and mental processes and states in health and disease. This applies with less force to those who have the advantages of special instruction, as in the pioneer training schools of the McLean and Buffalo Asylums.

Advice about dealing with that most difficult class, hysterical patients, of which every asylum has its representatives, might well find a place among instructions to attendants.

Nevertheless, taken as they are, these manuals ought to be carefully read, not only by attendants everywhere, but by nurses generally. A suitable book of this sort might be profitably recommended to nurses in general training schools, so frequently does it happen that nurses without any experience in such cases are put in charge of insane patients at their homes.

The Sixth Massachusetts Health Supplement.[1]

We are glad to receive the last health supplement to a report of a board of health, lunacy and charity. It embraces the following topics: "Malaria in Eastern Massachusetts," by Dr. Z. B. Adams, of Framingham. "Weekly Mortality Reports of Cities and Towns, for 1885." "Report upon Food and Drug Inspection." "Disposal of Sewage at Massachusetts Reformatory," by Wm. Wheeler, C. E. "Case of Lead Poisoning," by Dr. F. W. Jones. "Reports of Water Boards and Companies." "General Index of Health Supplements and Chapters on Public Health in Annual Reports."

Nearly two hundred cases of intermittent fever, generally tertian, rarely quotidian, more rarely still quartan, were observed in Framingham during the summer of 1885. The course of the disease and the surrounding conditions are described in a paper on this same subject read by Dr. Adams before the Massachusetts Medical Society and published in this JOURNAL, (vol. cxv, p. 173.)

For nine years the three factors of heat, moisture, and vegetable decay were present in the greatest activity in Framingham, while none, or rare and doubtful, cases of intermittent fever have arisen, until 1885; and then during an epidemic of the disease, few, if any, cases appeared in the vicinity of the great reservoirs and dams, where the three factors had been present in the highest degree.

Dr. Adams gives, appended to his paper, a very useful tabular statement of outbreaks of malarial fever in New England.

Under the law providing for the inspection of food and drugs, from January 1, 1885, to May 31, 1886, there were examined 6,029 samples of food, of which 2,433 were found adulterated or not conforming to the statutes; 3,664 of milk, of which 1,463 were below the standard; 1,607 of drugs, of which 729 were adulterated. Warning notices to retailers were sent in 1,031 cases. The number of prosecutions conducted and complaints entered were for milk 68, butter 32, other articles of food 18, drugs 1.

The disposal of sewage at the Concord Reformatory by irrigation is described; a case of lead poisoning is reported; a chemical examination of 88 specimens of wall-paper showed 34 to contain much arsenic; 9 considerable, and 17 a trace; sixty-six pages are devoted to a statement of statistical returns of water-boards required by law, but most of which has its chief value to persons interested in water companies rather than to sanitarians.

As we have often felt it our duty to differ with the executive of the State, and the Legislature, in the struggle to separate the board of health from its lunatic and charity combination, we take great pleasure in giving Governor Robinson the highest praise for his recommendations to the Legislature in the matter, and especially for the high character of the new board of health which he has appointed.

[1] Seventh Annual Report of the State Board of Health, Lunacy, and Charity of Massachusetts. Supplement containing the Reports and Papers on Public Health, with a General Index. Boston: Wright & Potter. 1886.

— Sir Andrew Clarke, the celebrated English physician, is reported to have declared that one-half the population of London is permanently ill. He defines health as "that state in which the body is not consciously present to us; the state in which work is easy, and duty not over great a trial; the state in which it is a joy to see, to think, to feel, and to be." With such a definition of health, we suspect that his statement is well within bounds.

— "'Pears to me," said old Uncle Pete, as he leaned his hoe against the corn-crib and abstracted a pebble from his shoe, "'pears to me like dar war some kin' o' misdecomposishum in all dis talk about babies cuttin' teef. De way I'se cum to look at it, hit's de teef cuttin' de baby. Leas'wise dat's de way hit looks in de case ob culled chilen." — *Archives of Pediatrics.*

— The *Northwestern Lancet* says: Last year an attempt at the cultivation of opium was made at New Ulm, Minnesota, by Mr. Emil Heschke. Several kinds of poppies were experimented with, and specimens of the *Papaver somniferum* were raised, whose unripe capsules yielded opium containing fifteen and two-tenths per cent. of morphine. The Pharmacopœia requires that opium shall contain ten per cent. of morphine, so that the Minnesota production came fully up to the standard. But, for some reason, it was concluded that the production of opium would not be profitable, and it is not likely that this industry will be added to the resources of that State, at least at present.

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PERFORATING INFLAMMATION OF THE VERMIFORM APPENDIX.

IT is not always easy to know just what advantage there may be in the publication of cases which present no very unusual features or new facts in pathology or therapeutics, though the cases are just unusual enough to occur but once or twice in the lifetime of a practitioner. But occasionally there appears a man who gathers together the clinical reports of such isolated cases and tabulates and analyses and studies them in connection with his own experience till he succeeds in showing the natural history of the somewhat rare affection, points out the particular direction in which danger lies and the proper method of interference.

A noteworthy example of such a study is to be found in a paper read at the Association of American Physicians at its first annual meeting at Washington, June last, in which Dr. R. H. Fitz discusses the perforating inflammation of the vermiform appendix with special reference to its early diagnosis and treatment, and published as the leading article of the October number of the *American Journal of Medical Sciences*. It is by no means easy to condense into the space these columns afford an article which is at once long and remarkable for the absence of superfluous words; but we wish to give our readers the results of Dr. Fitz's conclusions and at the same time to illustrate the advantage of reporting unusual cases with care.

Recognizing the lack of agreement in the use of the terms typhlitis and perityphlitis, Dr. Fitz has made a collection of 257 cases of perforating inflammation of the appendix. By limiting the attention to the essential features of these cases it was thought possible to recognize the characteristics of this sharply defined affection, by means of which it might be differentiated from all others occurring in this region. At the same time 209 cases of typhlitis and perityphlitis have been collected.

From the consideration of these cases it is apparent that perforating appendicitis is a disease most frequently occurring among healthy youths and young adults, especially males, and that attacks of indigestion and acts of violence, particularly from lifting, jumping and falling are exciting causes in one-fifth of the cases. A local cause is to be found in more than three-fifths of the cases in the retention in the appendix of more or less inspissated fæces, or in the presence there of a foreign body. The retention of fæces may be promoted by a constipated habit, but congenital or acquired irregularities in the position and attachments of the appendix frequently act as favoring causes. A fact in support of the last-mentioned statement is to be found in the frequency of successive attacks of inflammation of the appendix.

The course and results of the inflammatory process show extreme variations. A simple catarrhal appendicitis is to be recognized anatomically but its clinical appreciation is doubtful. This appendicitis may progress toward ulceration, even to a peritonitis which may result fatally, an event not unlikely in the presence of a foreign body. When the peritonitis represents the extension of the inflammation through the walls without perforation, adhesions will take place; when the appendicular peritonitis is associated with necrosis of the wall the inflammation of the peritoneal coat tends to become diffused and productive of serous and cellular exudations. The adherence of coils of intestine to each other and to the abdominal wall favors the accumulation of the exudation in a limited space and thus the formation of the tumor. At this stage the anatomical condition is a circumscribed peritonitis.

The peritoneal abscess may become absorbed or its contents may escape into the general peritoneal cavity through ruptured or softened adhesions, when as a rule death rapidly follows; or the tumor may suddenly diminish in size with the discharge of pus from a hollow organ, as the intestine, bladder or vagina. The anterior abdominal wall may be perforated and a sinus be established opening in the groin, lumbar region or at the umbilicus. The more protracted the course of the disease the greater is the probability of the destruction of the peritoneum which forms the wall of the abscess.

With the perforation of the parietal peritoneum may occur extensive necrosis, with purulent and fæcal infiltration of the abdominal walls. The primary appendicular peritonitis may in like manner be continued into the tissues behind the cæcum and thus a paratyphlitis or perityphlitic abscess be occasioned. So various are these possibilities that every case of so-called perityphlitic abscess must be regarded as primarily one of perforating appendicitis unless proven to be the contrary. The results of post-mortem examinations show that the attacks of inflammation of the appendix frequently occur without giving rise to characteristic symptoms. The latency of the symptoms in certain cases is such that the eventual diagnosis is obscured and the desirable method of treatment postponed. There can be but little doubt that a diag-

nosis of bilious attack, colic, gastritis, enteritis, gravel, ovaritis, congestion of the womb and the like may not unfrequently conceal the existence of an inflamed appendix.

Sudden severe abdominal pain is the most constant decided initial symptom of perforating appendicitis. Sometimes it follows an attack of diarrhœa. It is usually intense and is occasionally accompanied by a chill, or nausea and vomiting. Though usually limited to the fossa the pain sometimes extends upward as far as the liver or downward to the rectum, testicle, perineum or thigh. Great nervous anxiety, followed by a temporary prostration, is occasionally associated with the attack. This sudden intense pain is probably due not to the actual beginning of the disease but to the separation of the fresh adhesions of an acute appendicitis, and often, perhaps usually, to the perforation of the inflamed appendix. It generally represents the beginning of a more extensive peritonitis.

The abdominal pain is followed by fever as the next constant symptom. The temperature is rarely very high and the accompanying constitutional disturbances are frequently slight if not absent. During the first three days following the outset of the pain micturition is occasionally disturbed, and the use of the catheter may be necessary. The abundant use of opium at this stage of the disease explains this feature. The right testicle may be swollen and retracted, the course of the pain being towards this gland. The circumscribed swelling in the right iliac fossa when present is evidently of the utmost value in diagnosis. Its usual seat is below a line extending from the anterior superior spine of the ilium to the navel, nearer the former and two fingers' breadth above Poupart's ligament. It may lie nearer the median line or may approximate the iliac crest. Its exact seat may vary with the anatomical peculiarity of the appendix. The early products of peritonitis are obviously not to be recognized by physical signs. As the exudation increases dulness becomes apparent, but this sign may be obscured by intervening coils of intestine or the gaseous character of the contents of the abscess. A circumscribed resistance is felt on palpation though an anæsthetic may be required because of the tension of the abdominal muscles and the extreme sensitiveness. Rectal examination not infrequently permits the recognition of the tumor when abdominal palpation fails to disclose it. A sense of fluctuation is rarely perceived until later in the case; as a rule its appearance is so late as to be of little diagnostic value. Dr. Fitz does not believe that too great stress should be laid upon the diagnostic use of the aspirator. "If the aspirator fails to show the presence of pus even after repeated punctures in divers spots it by no means follows that pus is absent."

Errors in the diagnosis of appendicitis have been numerous, chiefly because the cardinal symptoms of localized pain, general heat, and circumscribed swelling have not been duly appreciated in their defined sequence. Of all the conditions with which perforating appendicitis may be confounded, stercoral cæcitis is perhaps the most common and the most important to distinguish. The history of this affection usually makes evident a period of protracted constipation in a person not especially young and vigorous and who may have had similar attacks. The pain is trifling for a long time and the sensitiveness slight. Fever is absent or of late occurrence. The tumor is present at the beginning as a distinct nodular or doughy mass, elongated and in the lumbar region. It is unnecessary to say that from a stercoral cæcitis may arise a perforative appendicitis.

The chief danger from the appendicular peritonitis is a tendency to become general. The beginning of general peritonitis occurred on the second, third, and fourth days in sixty per cent. of the cases as inferred from the nature of the pain, and in nearly ninety per cent. as suggested by tympanites.

Perforating inflammation of the appendix sometimes proves fatal from shock, though death usually follows the production of a general peritonitis from direct extension of the appendicular peritonitis or the rupture of adhesions. In the protracted cases death may result from exhaustion. Shock proves fatal within the first two days, death from an extended peritonitis within the first week and from a secondary general peritonitis as a rule during the first two weeks. The termination in resolution undoubtedly occurs, but no absolute evidence of the proportion of this class of cases is at present attainable. The possibility of a termination by resolution must be recognized and the earliest therapeutic efforts should have this result in view, especially as these efforts also tend towards localizing the peritonitis. But, as Pepper states, "the unjustifiable delay permitted in many cases of typhlitis, whilst hoping day after day for the more definite detection of suppuration, is the direct cause of many avoidable deaths."

To keep the bowels quiet should be the first and last thought and it should be obtained by absolute rest in bed, liquid diet, and above all, a sufficient quantity of opium to neutralize pain. A cathartic may be demanded by the patient and an enema be thought desirable as an aid to diagnosis, but it must be remembered that these may be the means of exciting a fatal general peritonitis. If after the first twenty-four hours the peritonitis is evidently spreading and the condition of the patient is grave the question should be entertained of an immediate operation for exposing the appendix and determining its condition with reference to its removal. If any good results are to arise from such treatment it must be applied early. Willard Parker considers an incision made between the fifth and twelfth day practicable, safe and justifiable, but it appears from Dr. Fitz's tables that thirty-four per cent. died during the first five days; it is thus evident that the date fixed by Dr. Parker is too late.

The conclusions to which the consideration of the subject leads the author are as follows: The vital importance of the early recognition of perforating appen-

dicitis is unmistakable. Its diagnosis, in most cases, is comparatively easy. Its eventual treatment by laparotomy is generally indispensable. Urgent symptoms demand immediate exposure of the perforated appendix, after recovery from the shock, and its treatment according to surgical principle. If delay seems warranted, the resulting abscess, as a rule intraperitoneal, should be incised as soon as it becomes evident. This is usually on the third day after the appearance of the first characteristic symptoms of the disease.

MEDICAL SECTS AND CLINICAL INSTRUCTION IN PUBLIC HOSPITALS.

Six or eight months ago petitions, upon which hearings were given, were presented to the trustees of the Boston City Hospital, asking that "homœopathic treatment may be furnished at the hospital for those who prefer it:" that, "all clinical advantages and privileges of the hospital be made equally available to all students pursuing the study of medicine in Boston;" that, "all medical students and physicians be allowed to visit the hospital for purposes of medical study and observation, on equal terms and subject to the same conditions."

The trustees, having during the intervening months, consulted with many gentlemen acquainted with hospital management, having examined the systems of hospital administration in other cities, having addressed inquiries to all the principal hospitals of the country as to their position and practice in these matters, and having received official answers from nearly one hundred hospitals, have at length, through their secretary, given an answer to the several petitions, after what must be admitted to be mature and careful consideration, involving much self-imposed labor.[1]

The introduction of homœopathic treatment for a portion of the patients would involve, it is stated, a change in the administration of the hospital which must be accomplished, if at all, in one of three ways: By introducing another and independent body of physicians and surgeons, side by side with the present staff; by setting apart separate existing wards with a separate staff; by building new wards for the homœopathic treatment.

Having kept constantly in view the cardinal principle, that the primary object of a public hospital should be the welfare of the sick; finding by their investigations that the introduction of medical sectarianism has only been attempted in two out of all the public hospitals communicated with, and not, as it would seem, successfully in either of those; believing that if one medical sect be provided for others should in justice be equally considered; encountering many practical difficulties, some of which are enumerated and others not, the trustees conclude that the desire of the homœopathic petitioners under the first petition can be fairly or satisfactorily gained only by new and separate buildings under a distinct management, and that the city government, not the trustees of the hospital, is the proper body to determine how and when the city shall provide treatment specially homœopathic, or specially anything, to such of its citizens as shall desire such special treatment when compelled to seek assistance at a public institution.

The question of instruction to students was considered:— 1st. As to surgical operations and clinical instruction in the amphitheatre or other public room; 2d. As to instruction in the wards or in the outpatient rooms; 3d. As to the admission of female students to the various privileges.

An instructive abstract is given of the practices prevailing upon these points at the leading hospitals of the great centres of medical education in this country, and, in addition, the answers from ninety-one hospitals are tabulated. In all the *public* hospitals, except two, the staff is composed of regular physicians, and of these two, one has both regular and homœopathic members, and the other has no visiting staff proper, but a head or superintendent (regular) assisted more or less by members of "all the schools, regular, irregular, and defective." Of all the hospitals answering the inquiries, five were homœopathic, the remainder were regular.

As a result of their consideration of the question of instruction to students — keeping always carefully in mind the welfare of the patients — the trustees have concluded to extend somewhat the previously existing regulations with reference to clinical instruction (medical and surgical) and surgical operations in the amphitheatre, and to contract somewhat the regulations with reference to clinical instruction, and visits by students in the wards of the hospital. In future, members of the surgical visiting staff may, on regularly appointed days, perform operations in the amphitheatre, and members of both medical and surgical visiting staff may likewise give instruction there in their respective departments. When the amphitheatre is so opened for operations and instruction, physicians having received a degree of doctor of medicine, and students, of one year's standing, of any duly incorporated college or school of medicine or surgery, may be admitted in such numbers and on such regulations as the trustees may from time to time determine. Whenever the operating surgeon or the physician shall deem a case improper for consideration, in the presence of students of both sexes, he may reserve such case for the close of his operation or lecture, and require the withdrawal of all male or female students, as the case may be. No female patient shall be taken into the amphitheatre without the attendance of a nurse (female), and no operation upon a female patient requiring the exposure of the genital organs shall be performed in the presence of male visiting students.

Female patients in the amphitheatre would seem, therefore, to enjoy a certain amount of protection not

[1] Action of the Trustees of the Boston City Hospital, upon the Petitions for the Introduction of Homœopathic Treatment, and for the Admission of Medical Students to Surgical Operations and Clinical Instruction.

accorded to male patients in so far as the clause concerning a class of operations requiring exposure is mandatory as regards them, but only permissive as regards the modesty of male patients.

In respect to ward visits it is determined that, physicians and medical students accompanying, on his invitation, a member of the staff in his hospital visit or examinations, shall be limited to such numbers, not exceeding twenty, and shall conform to such regulations as the trustees may from time determine, and shall further observe all such requests as to order and propriety as the attending physician or surgeon, or the Superintendent, may make. This change, we think, is likely in the long run to prove advantageous to students and certainly to some patients.

This report is an able, a careful and a laborious one. It reflects credit upon the faithfulness, the intelligence and good judgment of those who make it, and can hardly fail to give general satisfaction. It will doubtless prove a useful guide to others who may have to consider similar questions. The portion devoted to the practicability of introducing medical sects into public hospitals is in accordance with the views of the best authorities upon hospital administration.

THE SERPENT-MAN.

WE have been treated to such large doses of mental stimulants in the way of advertisements, especially by dime museums, that the announcement simply of "the earth's eighth wonder," the "serpent-man," etc., etc., would hardly whet the mental appetite to an extent the real worth of this meritorious phenomenon with the above fanciful designations would justify, even though his pictures, pasted on the bill-boards in our streets, in attitudes not at all "stained-glass," give evidence of something more unusual than the common run of contortionists.

A man that can wind himself up so that his head appears to be the radiating centre of arms and legs, in short, to be where the umbilicus ought to be, like the curious, carved monster on the celebrated Aztec stone, is sure to commend himself to the curious public, but the medical man can find an interest in the exhibition entirely apart from curiosity.

Herr or Signor Marinelli is a small man, of twenty-three years of age, with a good figure, who has devoted himself to increasing the flexibility of his back since he was nine years old, being led to it by a natural aptitude for tumbling, as exhibited among his comrades. An inspection of his figure shows an increase of the normal lumbar lordosis, and in place of the physiological curve between the shoulders, with the convexity backward, a complete dorsal lordosis is to be noticed, that is, the spinal column is slightly curved in. This is unaccompanied by the protuberant abdomen usually seen in lordosis, as the abdominal muscles are unusually strong, and hold back the intestines, which are probably not loaded with any superfluous fat in the mesentery and omentum. The ribs are prominent forward, as if the chest were large — an appearance due to a change in the thorax from the unusual shape of the thoracic spine. The pectoral muscles are not large, but the trapezius, the scapulæ, and the back muscles are well developed, and in excellent condition.

The mobility of the spinal column is increased in all its extent, but chiefly in the lower dorsal vertebræ; the backward motion of the spine is noticeably increased, but this contortionist illustrates remarkably well the physiological fact that the chief motion of the human spine is in the lower dorsal and cervical regions, and the increase in the flexibility of the spine is chiefly an unusual increase in the physiological mobility, and not a special anatomical freak.

It is, of course, impossible to determine how much of the present condition is a natural aptitude, and how much is acquired; but in the absence of any evidence of abnormality of structure, it is fair to infer that the natural flexibility in a nimble boy has been largely increased by painstaking and continued exercise. The curves in the back to be seen at present have been in all probability acquired. Instead of growing round-shouldered from his occupation, he has become the reverse, being probably the best living example of the kind of man "who stands up so straight that he leans over backwards," as well as an example for the encouragement of those who attempt to rectify spinal curvature by systematic exercises.

MEDICAL NOTES.

— The active principle of cod-liver oil, of which it forms one and a half to six per cent., is said to have been obtained by Mr. Lafarge, of Paris, and to have given excellent results when used in place of the crude oil. The substance is called morrhuol, and contains twelve times as much iodine, bromine, and phosphorus as the original oil, with none of the fat.

— An interesting contribution to the study of consanguinous marriages occurs in the paper of Dr. Baelz on the Japanese, referred to in another column. He says: "Near the bathing resort, Atami, there is situated a small island, named Hatsushima. The inhabitants of that island, nearly three hundred in number, have for more than two hundred years exclusively married amongst themselves; strange blood has never entered the island. Those people live by fishing, and from the proceeds of a small trade with the neighboring coast. They are physically and mentally quite normally developed, and their statistics show a larger number of births, and a smaller number of deaths in proportion than any other part of the Japanese empire."

NEW YORK.

— Health Commissioner Otterson, of Brooklyn, has submitted to Mayor Whitney a report in regard

to the disposal of the city's garbage, in which he favors the system of burning now in use in Toronto and other Canadian cities. Retorts for this purpose cost about $5,000 each, and Dr. Otterson thought that two would be sufficient for Brooklyn's wants in this respect.

— At a dime museum on the Bowery, the "Princess Lucy," nineteen years old, twenty-seven inches in height, and weighing twenty-three pounds, was recently married to "General Rheinbeck," who is twenty-one years of age, thirty-six inches in height, and weighs forty pounds. The fat woman of the museum acted as bridesmaid, and the fair bride is said to have blushed becomingly when the officiating clergyman, who was of Teutonic extraction, told her that she should bring up her children as "goot rebublican citizens of the United States." We extend our sympathies to the accoucheur!

— The annual meeting of the Board of Trustees of St. Luke's Hospital was held October 18th. The report of the Superintendent showed that the past year had been one of the most prosperous in the history of the institution. About $65,000 was received during the year from bequests and for endowments of free beds — an amount greatly in advance of the usual receipts of this character. The $100,000 left the hospital by the will of Wm. H. Vanderbilt is being used in part to erect a building for the Superintendent and other officers, and this, when completed, will leave a considerable portion of the hospital building hitherto occupied for this purpose vacant for patients. An upper story, which has not before been used, is also to be utilized during the coming year, so that the capacity of the hospital will be nearly doubled.

— A case of peculiar moral obliquity or ignorance in an individual having in charge the care and instruction of the young, has come to light in Westchester County, if the facts of the case are correctly reported. For a long time a very offensive odor, it seems, has been noticed at Lake Mohigan, and the attention of the Board of Health having at length been directed to the matter, an investigation showed that it was due to a sewer running directly from the Lake Mohigan Academy into the water of the lake. Not only has the principal of the academy permitted this disgraceful state of affairs to continue for an unknown period; but now that he has been requested by the sanitary authorities to remedy the evil, he flatly refuses to do this, and denying their authority to enforce an abatement of the nuisance, threatens a legal fight if they attempt it.

— At the last meeting of the New York Board of Education, the special committee on education presented a report recommending the tentative introduction of industrial education in the public schools. It stated that they believed manual training to be an important branch of education, and that it would be a great relief to the scholar, whose mind is burdened with ordinary lessons, enabling him to acquire such lessons with greater facility, on account of the variety thus afforded in his work. It would open new fields of employment to thousands of pupils, many of whom, in order to earn a living, are now compelled to leave school before completing the first grade of the grammar department. Technical education could be introduced either by establishing separate schools for manual training, or by teaching it in the present school buildings. The report went on to say:

"Your Committee are of the opinion that we should go to work tentatively. Any theoretical programme which might now be laid out would not do. Practical experience is needed. The Superintendent of School Buildings informs us that there are vacant rooms in various schools. In some or all of these we might teach mechanical or constructive drawing, modelling in clay, word-working by means of hand-tools, etc. If it should be found inexpedient to introduce power into any of our present buildings, some lofts might be rented for that purpose. In view of what we have stated, we unanimously recommend that $50,000 be asked from the Board of Estimate and Apportionment, in order to begin the experiment for the male grammar schools. The girls in our schools should also receive the benefit of a more practical education. Elementary cooking could be taught to a large number of the girls at a comparatively small expense. Your Committee are of opinion that twelve lessons, of two hours each, would suffice. We would also advocate that sewing be made compulsory in some classes of the grammar schools. At present it is made compulsory only in the primary department for one hour each week." The Committee also thought that some lectures on general housekeeping ought to be delivered to the girls in grammar schools, and recommended that an appropriation of $10,000 be asked for to introduce the subjects mentioned experimentally in the girls' schools.

Miscellany.

RESECTION OF LUNG AND REMOVAL OF A KIDNEY.

M. Demons read an interesting note at a recent meeting of the Paris Surgical Society.[1] An adult was stabbed between the ninth and tenth rib. A portion of the lung-tissue protruded, and formed a mass about as large as an apple; the same day the patient passed blood with his urine, indicating a wound of the kidney. M. Demons resected, by means of the écraseur the hernial portion of lung, and applied the thermocautery to the surface. Some days after the operation, there was purulent effusion on the left side of the thorax; chemical analysis of the fluid proved it to be principally urine. It was decided to remove the kidney. Nephrectomy was performed in the lumbar region; the twelfth rib made the operation more difficult; but M. Demons, remembering M. le Dentu's opinions, carefully avoided cutting it. The pedicle of the kidney was divided, and carefully ligated. The wound was sutured with metallic threads; reunion took place

[1] London Medical Record, August 16.

by first intention, but two months subsequently a mass of cellular tissue sloughed away and opened the cicatrix. It is now six months since the operation was performed, and recovery appears to be perfectly established.

THE PHYSIOLOGY OF THE EYE OBLIQUITY OF THE JAPANESE.

DR. E. BAELZ, in a communication to the German Anthropological Society, 1885, No. 10, gives some interesting contributions to the ethnography of the Japanese. From his paper, as published in the *Sei-I-Kwai*, we extract the following:

"The *eye* of East Asiatics, as is well known, is oblique, but this obliquity is exclusively based upon the position of the lids; the apple of the eye has nothing to do with it, and perhaps not the orbit. It is essentially caused by an arched fold descending from the upper lid over the inner angle of the eye, covering it, and extending inward and downward; and this fold, on account of its direction upwards and outwards, makes the eye appear more oblique than it really is. An exact measurement of the difference of height between the inner and outer angle of the eye shows that, in most cases, that difference is not considerable. The said fold is more or less present in the eyes of European children, so that one can get an idea of it by examining their eyes. It frequently extends over the whole length of the upper lid, so that it entirely covers the free edge of the lid, and with it the roots of the eye-lashes, which appear very short on that account. Since the inner angle of the eye is rounded off by the fold, and the outer angle is very sharp, the Japanese eye frequently very much resembles a button-hole. I believe it is caused through the skin, which, in the European, covers the upper part of the bridge of the nose; for the peculiarity disappears if the skin between the eyes of a Japanese is raised to the height of a European bridge of the nose, and in the case of a European, it can be produced by pushing the skin of the bridge of the nose towards the eye. There are, however, peoples with flat bridges of the nose without this fold.

"Of further importance as to the appearance of the Japanese eye, is the great distance between the eyebrow and the free edge of the eye lid, and the bolster-like appearance of the skin between them. In the Ayrian, almost without exception, there is an indentation under the eye-brow; in the Japanese, the upper lid, seen from the side, mostly is only the continuation of the skin of the forehead, interrupted by no indentation. The orbs project more than those of Europeans, and frequently so much, that seen from the side, they project further than the bridge of the nose."

SCARLATINA *SINE* EXANTHEMA.

A REVIEW of a carefully-prepared series of observations by Robert, in the *Revista de Ciencias Méd.*, which we find in the *Archives of Pediatrics* for August, shows that the author's experience in a number of carefully-observed cases revealed the following: The patients which were seen were all between the ages of two and nine years, suggesting the idea that the first and second infancy had something to do with this anomaly as to the exanthema. Fever was present, as in the ordinary form of the disease, but did not go beyond 39° C. Angina also was manifest in connection with a rapid and febrile pulse. The angina was of a catarrhal or hyperæmic type, however, and was not attended with enlarged tonsils, nor with pultaceous nor diphtheritic deposits. The tongue was red at the commencement of the disease, but there were no decided symptoms during the first few days of any grave internal disorder. The fever was of an intermittent character, of either the single or double quotidian variety. After these phenomena of the first stage of the disease have disappeared, a very important sign may be observed, namely, the presence of albumen in the urine. It may not be in large quantity at first, and may require the more delicate tests to discover it, such as picric acid, or the acid nitrate of mercury. Albuminous nephritis, whether medullary or cortical, with all its usual symptoms, constitutes the second stage of this disease, which is called the *white* form of the disease, as the skin is not colored red at any time during its progress — the renal lesion from the first appearance of albumen in the urine. This may happen within a few days of the first symptoms of the disease, or it may be deferred for a longer period, as in ordinary scarlatina. If the fever has remitted, it may appear, together with the other symptoms of acute parenchymatous nephritis, reaching 40° C., or even a higher point. The urine is usually scanty as to quantity, dense, contains blood, much albumen, many epithelial cells, and epithelial casts. The quantity of urea is diminished, ansarca is quite general, and the serous cavities, and especially the peritoneal, contain much fluid. In addition, there are visceral disorders which are common to uræmia, and which vary, as the lesions are in the nervous centres, the retina, the respiratory apparatus, the heart, or the gastro-intestinal tube. These symptoms, though serious, are not necessarily fatal, but the prognosis is less favorable when they occur in connection with a relapse which has made its appearance fifteen or twenty days after the appearance of the eruption. The treatment should consist of vapor baths, jaborandi, pilocarpin, and opium. The diet should be composed mainly of milk. Acetate of potash and quiniæ are useful for their diuretic and tonic effects.

THE POPE'S CHOLERA HOSPITAL IN ROME.

A CORRESPONDENT of one of the London papers gives an interesting account of the "model cholera hospital" which the Pope has caused to be erected in Rome for the accommodation of cholera patients in case of an epidemic. Contact with the outer world is carefully guarded against by grated windows, telephones, and by a revolving barrel with half its circumference open, by which provisions are taken into the hospital. The water-supply is drawn from a well, and is quite separate from the city supply. The drain is formed of an iron tube sixteen inches in diameter, the joints being hermetically sealed with lead. There is a disinfecting boiler in which corrosive sublimate is placed. There is a room called the "chamber of observation," which has a staircase leading up to the first floor. In this room dead bodies are placed for a given time, as it is well known that cholera patients

often show signs of being quite dead when really only apparently so. The room is, by means of an electric apparatus, in communication with the director's office. The body being laid on a bed, both hands are put into a sort of copper muff; between the hands is put an instrument so sensitive that, should there be the slightest movement of the hands or any other part of the body, this instrument would instantly close the electric circuit, and the bell in the director's office would be set ringing; at the same moment another instrument registers the number corresponding to the bed upon which the body is lying. The chamber is warmed by steam so as to facilitate resuscitation. The laboratory is provided with a gasometer for the storage of oxygen, which is taken to the wards for administration in gas bags. On the ground floor are four wards for doubtful cases; should they get worse they are sent up in the lift to the cholera wards above, their clothes and bed-linen being immediately burned. Another room is set apart for women in childbirth, and there are two more for undressing patients, so that the infected clothes may be destroyed, the Pope furnishing new clothing for all recovered cases. The cubic space allowed for each bed is thirty-six cubic metres. The ventilation is carried on by means of funnels with gas jets below. The chapel is in communication with the sacristy of St. Peter's, so as to form an easy access for the Pope should he wish to visit the hospital; but before returning into the sacristy his Holiness and suite would have to go into a room near it for disinfection. In the event of there being more cases than the hospital can hold, provision has been made for building large sheds in the garden. This hospital was begun in October, 1884, and finished in April, 1885. When the cholera was raging with such violence in Naples, Leo XIII determined upon making preparations should the scourge visit Rome. It has never been necessary to use it, but it is always ready in the event of an outbreak, and should prove of much use in extirpating it.

A BALD AND TOOTHLESS FUTURE.

Under the above somewhat startling caption a writer in the *Popular Science Monthly* gives some interesting facts gleaned by him while in the exercise of his duties as a reporter in some assemblies of Boston and other American cities. He says, under the subject of baldness, that in most of the Eastern cities, fully thirty per cent. of the men over thirty years of age show unmistakable signs of baldness, while nearly twenty per cent. have spots on their heads that are not only bald, but actually polished with the gloss that is supposed to belong to extreme old age alone. "I have been in the majority of the churches and theatres," he continues, "in all the large Eastern cities, as well as in Chicago, St. Louis, and other places of the West, and have verified my assertion by actual count. From my observation I find that bald-headed men are most plentiful in New York and Boston. After these come Philadelphia, Washington, and the Western towns. I say 'men,' for two reasons: (1) Because women usually wear their hats or bonnets on such occasions, thus covering their crowns. (2) In case their hats are removed, the hair is combed up so as to cover any possible bald spot, or else there is an artificial "switch" to hide the defects of nature. So, without indulging in any speculations regarding what may be, I will confine myself to what is to be seen.

"Here are a few observations taken in Boston. Trinity Church: 243 men; 71 actually bald, 46 indications of baldness. King's Chapel: 86 men; 38 actually bald, 14 indications of baldness. Hollis Street Theatre, orchestra at performance of the "Mikado": 63 men; 27 actually bald, 10 indications. Boston Theatre — Judic: 126 men; 51 actually bald, 43 indications.

"These observations were taken from the more cultivated classes of society, and do not give a fair representation of the Boston head, as repeated calls at the dime museums and cheaper variety performances demonstrated. For instance, of the 30 men seen in the seats of the World's Museum in Washington Street, but 8 were bald, while only 5 others had thin hair, showing that baldness was simply a question of a very few years. Again, of 40 men at Austin and Stone's Museum, 22 had their heads well covered; and at the Windsor Theatre (variety) I found less than twenty-five per cent. who had thin hair.

"On the other hand, at shows and entertainments of more refinement, the bald-headed element was considerably larger. Of two nights when Patti sang at the Boston Theatre there were forty-six per cent. of bald heads on one occasion and forty-two on the other. When De Lussan appeared in "Fra Diavolo" I discovered thirty-eight per cent. of baldness, and at one of Matthew Arnold's lectures there were forty-six per cent. In fact, out of hundreds of observations, extending over several years, I have found that the higher the price of admission, and presumably the more refining nature of the performance, the larger the per cent. of bald heads. One night I counted the occupants of a few settees in my immediate vicinity at an exhibition which John L. Sullivan gave at the Mechanic's Fair Building, and was surprised to find that less than twelve per cent. of the men were bald. As this was a show where the spectators had the privilege of retaining or discarding their hats at pleasure, I think it was not a fair test."

Correspondence.

TO ABORT A FELON.

Roxbury, Oct. 23, 1886.

Mr. Editor,— Some one asked how to abort a felon. I will tell him how I have aborted a great many, though of course this cannot be done except in the earliest stage. Tie a rag loosely around the finger and keep it constantly wet with cold water. It cures often; but probably some more fantastic appliance will better please most patients, and give them a higher opinion of the surgeon's skill.

Yours respectfully Edward T. Williams, M.D.

BOYLSTON PRIZE ESSAY.

Boston, Oct. 19, 1886.

Mr. Editor,— Would you kindly inform me through your columns if the subject for the next Boylston Essay has been announced yet, and if so, what the subject is, and greatly oblige A Reader.

["A reader" is referred to page 9 of advertisements in the issue of this *Journal* for Oct. 21st, the current year. — Ed.]

OBITUARY. J. C. HOADLEY, ESQ.

In the death of Mr. J. C. Hoadley the State has lost one of its best citizens. A man of sterling integrity, uncompromising honesty and unwavering patriotism, he combined the strictest sense of personal and public duty with a kindness of feeling and courtesy of manner that made him one of the finest types of New England character.

As a member of the State Board of Health of Massachusetts, the earliest in this country, the community, and especially the medical profession, has great cause of indebtedness to him for the ability, zeal, and wisdom with which he performed his duties as a member of that board. In the early struggles of the board, when its continued existence was doubtful, in the prolonged contests which closed nearly fifty slaughter-houses in Brighton and freed the State from the nuisances of noxious trades, during the years when the board was threatened on many sides and when its maintenance, through its delicate and difficult duties, was due only to the wisdom of its management, Mr. Hoadley's close devotion to his work, his patience and thoroughness in investigation, his quick conception of the truth, his unyielding adherence to the right, not listening for a moment to a time-serving policy or to the behest of politicians, his fairmindedness, good judgment and strict sense of justice, and withal his modesty, kindliness and consideration of the feelings of others, make him one in whom his associates could place the most absolute confidence, and upon whom they could depend in every emergency. They always felt that the final success of the board was largely due to him. He was a valued and devoted friend in whose friendship they rested, and in whose death they have suffered a deep personal loss. In his official work, as in his relations to his fellow citizen, and in his professional capacity as a civil engineer, he devoted a highly cultivated and scientific mind, with rare faithfulness, to the exact fulfilment of the least, as well as the great, duties which came before him.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 16, 1886, TO OCTOBER 22, 1886.

WISSEL, DANIEL, captain and assistant surgeon. Relieved from duty at Fort Fred Steele, Wyo., and ordered to proceed to and take station at Fort McKinney, Wyo., reporting to the commanding officer of that post for duty. S. O. 135, Department of Platte, October 15, 1886.

EDIE, GUY L., first lieutenant and assistant surgeon. Having returned from detached service in Department of Arizona, will join his station at Fort McIntosh, Texas. S. O. 144, Department of Texas, October, 13, 1886.

CHAPIN, ALONZO R., first lieutenant and assistant surgeon. Relieved from duty at Fort Laramie, Wyo., and ordered to Fort Washakis, Wyo. S. O. 137, Department of Platte, October 19, 1886.

IVES, FRANCIS J., first lieutenant and assistant surgeon. In obedience to instruction received from the Division Commander, ordered to report in person at headquarters, Department of the Platte, for duty. S. O. 146, Department of Texas, October 16, 1886.

KENDALL, WM. P., first lieutenant and assistant surgeon. Leave of absence extended fifteen days. S. O. 229, A. G. O. October 14, 1886.

BANISTER, W. B., first lieutenant and assistant surgeon. Assigned to duty at Fort Wingate, N. M. F. O. 97, Department of Arizona, September 29, 1886.

MASON, CHAS. F., first lieutenant and assistant surgeon. Relieved from temporary duty at Fort Verde, A. T., and ordered for duty at Fort Huashuca, A. T. S. O. 99, Department of Arizona, October 12, 1886.

BOSTON CITY HOSPITAL.

EXAMINATION OF CANDIDATES FOR HOUSE OFFICERS.

The semi-annual competitive examination of candidates for appointment to the positions of House-Officers at the Boston City Hospital, for the term of service beginning on the first Monday of January next, will be held at the Hospital at three o'clock, P.M., on Thursday, November 11, 1886. See advertisement, p. 2.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, Monday evening, November 1st, 1886, at eight o'clock. Readers: Dr. George W. Gay, "A Case of Laparotomy for Acute Peritoneal Adhesions: Recovery." Dr. J. H. McCollom, "Injuries of the Shoulder."

37 Charles St. CHARLES P. STRONG, M.D., *Secretary*.

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION. — The first meeting of the season will be held at 17 Boylston Place, on Wednesday evening, November 3d, at eight o'clock. Communications: Dr. Maurice H. Richardson, "A Case of Gastrotomy for the Removal of a Plate of Teeth lodged in the Œsophagus behind the Heart: Recovery." Dr. Royal Whitman, "A Report of Four Cases of Excision of the Hip performed in 1882."

SAMUEL J. MIXTER, M.D., *Secretary*.

180 Marlborough St.

SUFFOLK DISTRICT MEDICAL SOCIETY. — There will be a stated meeting on Saturday, October 30, 1886, at eight o'clock, P.M., at 19 Boylston Place. Dr G. H. Monks, "A Case of unusual Deformity of both Hip Joints: Exhibition of Patient." Dr. O. K. Newell, "The Male Urethra, some Observations on the Anatomy of, in Relation to Endoscopy, Litholapaxy, and Catheterization." Incidental Business: Action on a proposed Amendment to By-Law XV, by the addition of the following clause: "In making nominations for the officers of the Society in 1887 and each subsequent year until otherwise ordered, the Nominating Committee shall not nominate any member who has held any office in this Society for two consecutive years immediately preceding the year for which such nomination is made. Nominations for Treasurer, Secretary and Librarian are excepted from this restriction."

Choice of a committee of five to prepare a list of candidates for officers of the Society. Supper after the meeting. Members are requested to notify the Secretary of any change of address.

200 Dartmouth St. HERBERT L. BURRELL, *Secretary*.

DEATH.

Died in Cambridge, Mass., October 18, 1886, Alley Talbot Wakefield, M.D., M.M.S.S., aged thirty-one years.

BOOKS AND PAMPHLETS RECEIVED.

Diphtheria and its Treatment, an Essay. By J. Pirnat, of Evansville, Ind. 1886.

Report of Two Successful Cases of Trephining for Traumatic Epilepsy. Carlos F. MacDonald, M.D. (Reprint.)

The Human Color-Sense Considered as the Organic Response to Natural Stimuli. By L. Webster Fox, M.D., Philadelphia, and George M. Gould, A.B. 1886. (Reprint.)

Is Electrolysis a Failure in the Treatment of Urethral Strictures. By Robert Newman, M.D., New York. New York: 1886. (Reprint.)

Transactions of the Medical Association of the State of Missouri at its Twenty-Ninth Annual Session. Held at St. Louis, Mo., May 3, 1886.

Therapeutische Notizen aus Dr. Letzel's Policlinic für Haut Krankheiten und Syphilis in München. III. Das Oleum Santalum ostindic. Als Anti-Blennorrhagicum.

Method in Medical Study. By Charles H. May, M.D., Instructor in Ophthalmology, New York Polyclinic; Clinical Assistant in the Department of Diseases of the Eye and Ear in the College of Physicians and Surgeons, New York. New York: 1886. (Reprint.)

The Mechanism of Indirect Fractures of the Skull. By Charles W. Dulles, M.D., Fellow of the College of Physicians and of the Academy of Surgery of Philadelphia; Surgeon to the Out-Patient Department of the Hospital of the University of Pennsylvania and of the Presbyterian Hospital in Philadelphia. (Reprint.)

Hémorrhagies Utérines Etiologie, Diagnostic, Traitement. Par Le Docteur Snegurieff, Professeur de Gynécologie à l'Université impériale de Moscou. Edition Française Rédigée par M. H. Varnier, Interne des Hôpitaux de Paris, sous la Direction de M. le Docteur Pinard, Professeur Agrégé à la Faculté de Paris, Accoucheur de l'Hôspital Lariboisère. Paris. 1886.

Outlines of the Pathology and Treatment of Syphilis and Allied Venereal Diseases. By Hermann von Zeissl, M.D., Late Professor at the Imperial-Royal University of Vienna. Second Edition, Revised by Maximilian von Zeisel, M.D., authorized edition translated, with notes by H. Raphael, M.D., Attending Physician for Diseases of the Genito-Urinary Organs and Syphilis, Bellevue Hospital, Out-Patient Department, etc. New York: D. Appleton & Co. 1886.

Forty-Fourth Report to the Legislature of Massachusetts Relating to the Registry and Return of Births, Marriages and Deaths in the Commonwealth for the Year ending December 31, 1885. Together with the Report Relating to the Returns of Libels for Divorce and to the Returns of Deaths investigated by the Medical Examiners for the Year 1885. Prepared by the Secretary of the Commonwealth, with Editorial Remarks by Frank Wells, M.D. Boston: State Printers. 1886.

Lecture.

ON TETANY AND TETANILLA.[1]

BY JULIUS ALTHAUS, M.D., M.R.C.P. (LOND.),
Corresponding Member of the New York Academy of Medicine, Senior Physician to the Hospital for Epilepsy and Paralysis, Regent's Park, London.

ANOTHER important feature of tetany upon which I must dwell now, is an alteration in the electrical and mechanical excitability of the affected nerves and muscles, which occurs habitually in the cases now under consideration. Indeed, the faradic and galvanic excitability of the affected nerves, which was first examined by Benedict, and afterwards by Chvostek, Erb and others, is generally found to be much increased. A feeble constant current causes with the cathode not only the ordinary closing contraction much more readily than in the average healthy subject, but also tetanus of the muscles, which continues for some time; and what is rare in man, although not uncommon in the experimentalized frog, tetanus with opening at anode; and likewise with opening at the cathode. Ready responses are also elicited with a very gentle faradic current; and this ensemble of phenomena constitutes the reaction of convulsibility.

These signs are chiefly marked when the disease is at its acme, become less striking as the patient improves, and disappears altogether when he is well. They occur, however, only in the nerves and muscles which are actually suffering from tetany, not in all the muscles of the body; and this easily explains the apparent discrepancy in the results obtained by the different observers. Erb saw no reaction of convulsibility in the portio dura, while Chvostek found it very marked there in a case in which the muscles of the face were suffering from tetany. The electric tests are not only of diagnostic, but also of prognostic importance, as they sometimes persist when the patient is apparently quite well in other respects. They then show us that the disease, although in abeyance, is not actually conquered, and that there is a liability to a fresh outbreak of the other symptoms. When on the contrary, these tests have become normal, we may consider with certainty that the patient has recovered. They are, therefore, even a finer test than Trousseau's symptom, which may have disappeared at a time when the electricial reactions are still abnormal.

The mechanical excitability of the nerves and muscles is likewise habitually increased. A tap with the fingers or the percussion hammer on the nerves causes a sudden contraction in the muscles supplied by the same. This is more particularly noticeable in the sphere of the portio dura, where a slight blow in the region of the stylomastoid foramen, or the pes anserinus, or even the smaller branches of the nerve, effects sudden contractions of the facial muscles; and that not only during the attack, but also in the free intervals. A good way of producing the phenomena in question is that recommended by Schultze, namely, to pass the fingernail rapidly down one side of the face, from the temple to the cheek and jaw, when all the facial muscles are seen to contract. The reflex excitability of the skin is not exalted, and has indeed nothing to do with the appearances observed; for when the skin is taken up in a fold, and then strongly squeezed or pinched, no effect takes place. This increased mechanical excitability occurs in the portio dura habitually, even where that nerve has otherwise apparently escaped the influence of tetany; and it is therefore a very important diagnostic help. We must, however, remember that it is not invariably present. Moreover I have seen it in fresh cases of paralysis of the portio dura, concurrently with the increased voltaic excitability of the muscles; and also in some patients suffering from neurasthenia and hysteria. This shows that it will not do, in this as in other diseases, to rely on a single symptom for our diagnosis, but that we have to judge from the entire evidence which the aspect of the case offers to us.

Another symptom which exists during the free intervals, is a decided loss of coarse muscular power. This can be shown with the dynamometer, which I have found to register habitually 30° or 40° less than we should expect from the general build of the patient; and this loss is made up when they recover. There is also subjectively a feeling of lassitude, and fatigue is easily induced by slight muscular exertion.

While, therefore, tetany shows us a great variety of symptoms in the motor sphere, these are much less conspicuous in that of sensibility. I have already mentioned that much pain is sometimes experienced during the attack, more especially by sensitive children, who are at the same time reduced in their general health; but some patients say that the pain is insignificant. There is, however, generally tenderness to pressure and percussion over the affected nerves and muscles, more especially during the attack; and the same is found in the spine, particularly at that decisive point, the seventh cervical vertebra. Feelings of cold or heat, pins and needles, and other forms of paræsthesia, are occasionally present, but as frequently absent. Sometimes, however, the sense of touch is blunt, so that the patient feels objects as if padded, and imagines that he is walking on a carpet when on a bare floor. The muscular sense is habitually not impaired.

There are few other symptoms to mention. Sometimes there is redness and œdematous swelling, more especially in the smaller joints of the fingers and toes, but also in the wrist and about the ankle, leading us to suspect an attack of acute rheumatism or rheumatic fever. The temperature is mostly normal, but rises to 100° or 101° and even more in very severe or acute cases; and the pulse is thus accelerated, although habitually normal. There may also be headace, dizziness, flushing of the face, buzzing in the ears, impaired sight with large and sluggish pupils, rapid breathing, loss of appetite, obstinate constipation, and either unnatural dryness of skin or excessive perspiration.

In the majority of cases, however, the secretions do not appear to undergo any morbid change. It is true that Delpech has described albuminuric tetany; but these cases belong to a different class from those which we are now considering.

The duration of the individual attack of rigidity varies from a few minutes to half an hour and more; and the number of attacks during the day is even more variable. Sometimes there are only two or three, at other times there is an almost constant succession of them, reminding one of the status epilepticus, and going on night as well as day. The entire duration of the disease is rarely less than a month, and more commonly two or three months.

A few cases of tetany have ended fatally; but in

[1] Concluded from page 393.

spite of this, morbid anatomy has not furnished us with any precise data concerning the nature of any pathological change. One of Trousseau's patients died eventually of phthisis, and the upper portion of the cord appeared to be somewhat softened.

Kussmaul discovered myelitis in a young man who had been seized with paraplegia some weeks after having recovered from tetany; but the occurrence of paraplegia shows that the case was a complex one, and it therefore proves nothing. Langhans has microscopically examined the cord of a child which had died of tetany; he found the nerve-cells and fibres, as well as the interstitial connective tissue unchanged, but the arterioles showed thickening of the adventitia by deposition of cells, granules and pigment; and this was, in accordance with the symptoms observed during life, more marked in the upper than in the lower region of the cord, and more particularly about the anterior commissure. Such changes, however, which must have had a very slow origin, cannot account for a complaint which often originates suddenly, and ceases almost as quickly. I fear that just as little can be learned from a case of Weiss' where death took place from œdema of the lungs, following lobular pneumonia at the left base, and in which Zemann found the brain and membranes slightly œdematous, but otherwise normal; the capillaries of the gray centre of the cord appeared distended, and in parts there were very small capillary hæmorrhages, while the coats of the bloodvessels appeared normal. Such changes are probably rather effect than cause. In other instances hyperæmia of the dura mater, of the pia on the base of the brain, of the pons, bulb and upper portion of the spinal cord, and of the peripheral nerves which had more especially suffered during life, have been found; and must likewise be looked upon as secondary consequence rather than primary cause. Indeed, the great diversity and variety of these changes is in itself a proof that we have not as yet discovered the lesion of tetany; while other considerations lead us to think that, if there is a lesion, it is likely to be molecular rather than coarse, and that tetany belongs indeed to that large class of functional nervous affections which still awaits the application of finer tests than we command at present, before we can have a clear insight into their nature.

Nevertheless, some speculation seems to be allowed and even called for, more especially with regard to the localization of the trouble which is present in these cases. That it must be seated in some portion of the motor sphere, is quite evident from the symptoms we have to deal with, in which the affection of motility overshadows everything else. We have a large choice from the central convolutions of Rolando at one end of the tract, to the striped muscular fibres at the other. Which is primarily affected? DeLa Berge has pronounced himself for the muscular substance itself; Delpech, Hasse and others for the peripheral nerves; Kussmaul, Erb, and Berger for the spinal cord; Weiss for the sympathetic nerve, which he believes to be in a state of irritation or disturbance which is constant, but periodically increased, and while causing irritation of the gray matter of the cord and medulla oblongata, is itself caused by irritation in the bowel, womb, thyroid body, and other viscera. No one seems to have suspected the pons, crura cerebri, the central ganglia, the white internal capsule, and the central convolutions; and this appears quite intelligible if we consider that the symptoms are habitually symmetrical, while the usual affections of the parts just named are, on the contrary, unilateral. A great medical philosopher, Hughlings Jackson, considers tetany to be due to perverted cerebellar influence. He looks upon the brain as the centre for the ordinary voluntary movements of the limbs, and the cerebellum as the centre for continuous or automatic movements in the body. Now supposing the cerebral influence to be temporarily removed, the cerebellar influence would be unimpeded, and lead to rigidity of those muscles which during health are chiefly innervated by the cerebrum. I confess that this theory seems to me very far-fetched. Most physiologists consider not the cerebellum, but the medulla oblongata and the pons varolii to be the centres for automatic movements, while the cerebellum is credited chiefly with being the centre for the equilibration of the body. This latter function is, however, in no way disturbed in tetany, and this appears to me a sufficient reason for rejecting Jackson's hypothesis. It appears to me that some light may be gained by comparing tetany with another disease, in which we have likewise hardly any symptoms excepting in the muscles, and of which we know by dissection the true morbid anatomy. This is infantile paralysis, as caused by poliomyelitis of the anterior gray matter of the cord. In such cases we have not infrequently symmetrical paralysis of certain groups of muscles, just as in tetany we have the opposite condition, namely, rigidity which is most frequently symmetrical, and which affects with preference certain groups of muscles, leaving others intact. In infantile paralysis, which is a structural disease, we have chiefly paralysis of extensors and abductors, while in tetany, which I believe to be a functional disease, we have rather affection of the flexors and adductors. The nutritive centres of these groups of muscles we know to be the giant cells in the anterior cornua of the cord; and it is to an undue and exalted state of excitability of these cells that it seems to me most reasonable to refer the symptoms of tetany, just as we refer to destruction of these cells the opposite symptoms of paralysis in the groups of muscles for which we know them to be the centres. The localization of the trouble in the gray cells of the anterior cornua would then have to be sought in the lumbar, dorsal, or cervical region of the cord, or in the motor nuclei of the medulla oblongata, in accordance with the localization of the symptoms in the muscles of the lower extremities, the body, the upper extremities, the neck, head, face, eyes, pharynx and larynx. I confess that this seems to me the most natural explanation of the symptoms of tetany as they are seen clinically. Why irritation should in these cases affect more particularly the anterior gray cells of the cord and bulb, is, of course, quite as inexplicable as why it should affect certain gray centres in the brain in cases of epilepsy; but all these final reasons escape for the present our grasp, altogether, and we shall have to wait for a future period when in the natural course of evolution men's brains will have become much heavier and more finely organized than they are at the present day.

The diagnosis of tetany is not always easy, except in very pronounced or typical cases. Buzzard, a careful observer, has recorded a case as one of tetany, which was evidently, from his own description, one of hysterical contracture. The patient was a Jewish

girl, aged ten, who had suffered for three weeks from tonic, persistent contraction of the flexor muscles of the upper and lower extremity; there was some œdematous swelling, and over the knuckles a slight flush of redness, which made the case look like one of acute rheumatism. No intermission of symptoms was observed, nor did the muscles become relaxed during sleep. In a day or two, however, she began to improve, and had no return of the spasm. The chief feature of tetany, therefore, namely, the intermittent or paroxysmal nature of the muscular spasm, was absent, and the case can, therefore, not be said to be one of tetany. We have, indeed, in the diagnosis of this disease, to rely chiefly upon the paroxysmal occurrence of the spasms, the peculiarity that they spread in a direction from the periphery to the centre, on Trousseau's symptom of potentiality of spasm, which is elicited by compression, and on the electrical and mechanical convulsibility of the nerves and the muscles.

It is not likely that tetany should ever be confounded with epilepsy, as there is never any loss of consciousness in the former, and the whole group of symptoms of the epileptic fit is totally different from that of tetany. In Jacksonian epilepsy the symptoms are likewise widely different, and I should not refer to it if I had not known of a case in which this mistake was made by a practitioner. I will, therefore, say that in Jacksonian epilepsy there are tonic or clonic spasms, which generally affect not symmetrical parts, but one upper or one lower extremity; that they begin most frequently in the fingers, and travel from there upwards to the face, and sometimes end in general convulsions; that after the fit there is paresis in those parts which have been convulsed, and that this paresis eventually merges into paralysis; that, where general convulsions occur, consciousness is lost; and that after the parts have become paralyzed, they are still liable to be convulsed. In addition to these symptoms, we generally find also headache, optic neuritis, and vomiting, pointing to the formation of a tumor in the brain, or some allied structural disease of that organ.

Spinal meningitis has also been occasionally mistaken for tetany, yet the difference between the two conditions is likewise very striking. In meningitis we have fever, severe pains in the back; no such periodical remissions of the muscular spasms as in tetany; no Trousseau's symptom, and no increased excitability of the nerves to electrical and mechanical tests; and frequently, headache, vomiting, and a small and often slow pulse. Some forms of *acute rheumatism* have been confounded with tetany, but attention to the points which I have repeatedly named as characteristic for tetany will settle the question. In some forms of *ergotism*, spasms have been observed which resemble those of tetany, but ergotism is habitually endemic; it is generally connected with symptoms of spinal degeneration, such as loss of knee-jerk, lightning pains, impaired coördination, and not unfrequently, with epileptiform convulsions. Localized convulsions, such as histrionic spasm, torticollis, and convulsions in some individual muscles of the extremities, have also been occasionally described as tetany, but only from ignorance. Lastly, *tetanus* affects more especially the muscles of the jaw, tongue, pharynx, larynx, the neck, body, and the abdomen; reflex excitability is increased throughout the system; when the extremities are affected, it is chiefly the extensors; and the fingers and hands, which suffer more particularly in tetany, are spared in tetanus.

This seems to be the most fitting opportunity to speak of tetanilla, or Friedreich's paramyoclonus multiplex, as another form of muscular spasm which is not very uncommon in practice. I have seen the complaint, especially in neurotic subjects, frequently with a history of masturbation and inherited nervous affections, and between the ages of fourteen and fifty-four. All the patients were males, and no particular exciting cause could be discovered. It differs from tetany chiefly by the convulsions being clonic, and by the absence of prolonged muscular rigidity, and of Trousseau's symptom. The convulsions are, moreover, generally symmetrical; they cease during sleep, and do not impair motor power or coördination. The nutrition and electrical reactions of the muscles are normal, but their reflex excitability is increased, the knee-jerk, more especially, being greatly exaggerated.

The degree of spasm varies considerably, being in some cases slight, and in others of considerable severity; in some temporary, and in others almost incessant. All the muscles of the body may be affected, either simultaneously or successively. The spasm very commonly affects the adductor of the thumb, and the interosseous of the first finger, so that a movement as that of holding the pen for writing is produced, and the bellies of these two muscles are distinctly seen to contract under the skin. Each contraction lasts five or six seconds, is entirely painless, and is presently succeeded by a variable number of other contractions, of which, however, there are rarely more than six or seven. After this there is an interval of rest, and then a further similar set of contractions. Other muscles which suffer frequently are the deltoid, the rectus femoris, the flexor muscles of the legs, the orbicularis of the lips and eyes. Of the latter muscles, generally, only small portions are affected; for instance, the parts immediately adjoining the commissure of the lips, which are spasmodically contracted for a few seconds, then relax, and repeat this performance five or six times consecutively, after which the muscle is quiet for a few minutes, and then begins to play again.

In other cases the spasm is much more violent, and spreads over a much larger number of muscles. There may be a more or less constant clonic convulsion in the muscles of the face, neck, chest, and abdomen, as well as of the limbs, and which is occasionally intensified by more powerful contractions of individual muscles, by which the head may be suddenly pulled to the side or backwards, the eyelids closed, a sudden inspiration, like singultus, may be caused, and arms and legs thrown about. Perfect rest generally eases the spasms, while walking, using the hands, etc., is apt to increase them, and the patient may, therefore, be more or less disabled from following his occupation.

In one of my cases, that of a cabinet-maker, aged twenty-six, the right upper extremity was the exclusive seat of these clonic convulsions, which were quite sufficiently strong to throw the limb about in all directions, generally lasted two or three minutes at a time, were succeeded by four or five minutes' rest, and then began again. This man was utterly unable to earn his living through this most annoying affection. But it is chiefly the influence which the recurrence of such symptoms has on the mind of the sufferer that is of importance. One of my patients who suffered in this way had been told that it was a sign of beginning

progressive muscular atrophy, and as he had suffered from syphilis, and was in a low state of health, this prediction made him quite hypochondriacal. Another patient, a medical man, who had read about Jacksonian epilepsy without having ever seen a case of it, believed that these clonic spasms were the first symptoms of tumor of the brain, and that he was on the high road to become blind, epileptic, and imbecile. A third patient, likewise a medical man, had given up a large practice on this account, and gone abroad, being convinced that he was suffering from brain disease.

It is, therefore, important to know the differences which exist between the muscular twitches seen in progressive muscular atrophy, the spasms observed in Jacksonian epilepsy, and the clonic spasms of tetanilla or paramyoclonus multiplex.

The twitches or fibrillary motions of muscular fibres which are seen in patients suffering from progressive muscular atrophy are generally of a sluggish and worm-like description. There is nothing sudden or actually spasmodic about them, and as they affect more or less individual fibres only, they are not in general sufficiently powerful to cause movements of the limbs or any parts of them. They come and go, are easily excited by passing the finger-nail over the affected limb, or by exposure to cold, and are essentially diffuse in character. They must be considered as a sign that degeneration has been set up in the muscular fibres, and have, in general, a bad prognostic significance, showing that the disease is progressing. I need not further dilate upon the complete difference which exists between them, Jacksonian epilepsy, and tetanilla. The spasms of the latter are certainly not forerunners of any serious cerebral or spinal disease, for in one case which I have seen, they first occurred at sixteen years of age, and subsequently at various times; at fifty-four years, however, the patient was still in good health, although occasionally subject to attacks of this kind, which sometimes lasted for a few weeks, and then ceased. All my other cases have recovered. These spasms I believe to be owing to a similar, although much slighter degree of irritation in the giant cells of the anterior gray matter of the cord than those of tetany.

The *prognosis* of tetany is generally not serious, except in very young children, who have no power of resistance, and where spasm of the glottis, or general convulsions are often so easily induced.

It is also not favorable in persons who are extremely cachectic and reduced in strength. In most cases, however, tetany is not a dangerous complaint, and the patients recover in two or three months, more especially if placed in favorable circumstances.

For the *treatment* of tetany, Trousseau recommended bleeding and cupping of the spine; yet he mentions a case in which, by bleeding, the affection was made much worse and more general. At first the patient only suffered in his hands, so that the fingers were clenched and useless; but after the bleeding, the other parts of the limbs, as well as the muscles of the body, became affected, so that he sat quite motionless, and could hardly speak or breathe. In the present day bleeding is not likely to be resorted to, more especially as these patients are habitually in a state of exhaustion through persistent diarrhœa, or when convalescent from acute diseases. Just on the contrary, it should be our endeavor to build up the constitution of the patient, by removing him, if possible, from his habitual injurious surroundings, by giving him nutritious and easily-digested food, and such remedies as cod-liver oil, phosphorus, and arsenic. In recent cases, where exposure to cold and wet appears to have been the cause, the Turkish bath, or a wet pack, ammonia, and opium should be used. Where diarrhœa is present, astringents, more especially opium and aromatic sulphuric acid, are to be given. Where worms are suspected, the usual anthelminthic remedies find their appropriate sphere of action.

As direct sedatives, hydrate of chloral and urethan act better than hypodermic injections of morphia. Those highly popular remedies, iodide and bromide of potassium, have also been called in to our aid, and have proved useful in some cases. Electricity has frequently been employed without success, when applied to the affected nerves and muscles, while the application of a large anode to the spine, with the cathode at a distance, seems to be much more useful, as having a sedative effect on the unduly excitable gray cells. For cutting short an individual attack of tetany, which threatens life through involving the larynx and diaphragm, I know nothing equal to a subcutaneous injection of pilocarpine, which seems to act like magic. As soon as profuse perspiration is established, the spasm ceases, and the patient is rendered comfortable.

The treatment of tetanilla should be chiefly mental. The patient must be assured that there is nothing serious the matter with him, and that his brain is unaffected. Electricity used in the way just described, and Paquelin's cautery are other appropriate remedies, and rarely fail to cure an affection, which, while it is apparently insignificant, yet suffices to make life utterly wretched for these patients, and has driven some of them close to committing suicide. Indeed, there is nothing really insignificant in the practice of our profession, as slight causes may lead to grave results, often through the agency of the imagination.

Original Articles.

ON THE EXACT MEASUREMENT OF THE ELECTRIC-CURRENT AND OTHER PRACTICAL POINTS IN THE DESTRUCTION OF HAIR BY ELECTROLYSIS, WITH ESPECIAL REFERENCE TO THE USE OF THE ABSOLUTE GALVANOMETER.

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To remove hair by electrolysis is a very easy operation, but it is not so easy to do it without leaving behind disfigurements, either temporary or permanent. One of the disadvantages connected with the process is the dermatitis which is apt to follow the operation, to say nothing of the more severe papular inflammations, and not infrequent ulceration of the hair-follicles. Worse still, because permanent, are the scars. The latter, to be sure, even on a woman's face, are a small disfigurement, excepting when the process has been badly done, compared to that caused by unsightly hairs; still, they are scars. The dermatitis, to be sure, is only temporary, lasting only a few days, but while it lasts the skin is sore, and the face decidedly disfigured. The small ulcerations of the hair-follicles, small as they are, are of more importance, as they

lead to comparatively large scars, instead of the almost invisible cicatrices left, if any at all develop, by the process when properly done. It should be stated, however, that even minute cicatrices are not a necessary result.

It is generally stated by those having experience with the operation, that these ill effects are dependent upon the peculiarities of the individual skin, some skins bearing the operation without any bad after-effects, while others are easily inflamed. While there is considerable truth in this, and there is even a difference in the capacity of different parts of the skin of the same face to bear electrical currents without inflammatory reaction, still I have long suspected that the greater part of the difficulty is due to the intentional or unintentional use of excessively strong currents, and that such unintentional use is due partly to the fact that no proper means are employed to measure the strength of the current, and partly to the fact that a current from a given number of cells varies immensely in strength during the course of a single sitting, owing to the varying resistance offered by the skin. To overcome the undesirable effects which are consequences of these difficulties, I have hitherto advocated using the weakest currents possible, preferring to have more hairs come back to be operated upon again, rather than run the risks of pustules and disfiguring scars. Though secondary inflammation and cicatrices have in this way been mostly avoided, still the operation has been beset with great annoyances, such as the sudden weakening of the current below the strength practically necessary for the destruction of the hair papilla, with consequent imperfect results, necessitating tedious fussing with the battery, while again, the strength of the current may suddenly rise, for various reasons, above the required point, etc., etc. It was not till I began using the *absolute* galvanometer that I found a practical method of gauging the strength of the current, nor till then did I appreciate the extent of the fluctuations that may occur in the current strength in the course of a single sitting. Nothing is more uncertain and useless than the methods usually recommended by those who practise the operation for determining the strength of the current. Every writer on the operation, that I have seen, directs either that so many cells be used, or that a current sufficient to produce effervescence at the needle be employed.

Now, for reasons that will be presently explained, a most powerful current — one sufficient to produce severe destruction of tissue — may be unwittingly used without effervescence occurring, and in the second place, with the same number of cells, the current may vary five-fold, at least. It has been long known to electro-therapeutists that the number of cells, even aside from the difference in strength of the cells of different forms of batteries, is no guide whatever to the strength of the current. Another factor, besides the electro-motive force of the cells, must be taken into consideration, namely, the resistance to be overcome. This varies immensely, according to the size and construction of the electrodes, the degree of pressure with which they are applied to the body, the condition of the skin, its dryness or moistness, the portion of the body to which the electrode is applied, etc., etc. That these are no theoretical difficulties, but practical ones, may be seen by the results obtained in the following experiment: A current from the same number of cells was applied through the same electrodes, thoroughly wet at each application. The resistance of the skin over the spine had previously been reduced to a minimum by prolonged applications.

1. One electrode over palm, other over back of hand.	Current =	2	Milliampères.
2. One over spine, other over palm.	"	2	"
3. One over spine, other over back of hand.	"	6	"
4. One over each lateral half of back.	"	8	"
5. One over spine, other over forearm (front)	"	9	"
6. One over front, other over back of forearm	"	9	"
7. One over spine, other over back of forearm	"	10	"
8. Both ever spine.	"	10	"
9. One behind each trochanter.	"	11	"

Or, in other words, with the same given number of cells and the same electrodes, the current may be increased from two to five times, according to the different location of the electrodes in the same individual.

Again, with the positive electrode over the back or front of the forearm, negative on some part of the face, the current frequently varies, in the experience of the writer, between one and three milliampères, though the same number of cells be used, according as the needle is inserted in different parts of the same face.

The same thing happens, as would naturally be expected, with a current from the same number of cells applied to different persons, though the conditions be made as far as possible alike. I have found that after taking all possible precautions to apply the poles to the same regions, and after reducing the resistance of the skin to the minimum, that from twice to three times as strong a current may pass through one person as through another, though the same number of cells be used. Again, the fluctuations in the current strength dependent upon the size of electrodes may be seen from the following experiment:

The same number of cells were used in each case, and the electrodes applied to the same region of the body, namely, the thighs. The electrodes were of five sizes, No. 1 being the smallest, and about the size of the top of a slate pencil. The largest, No. 5, measured 3×6 inches, but the whole surface was not in complete contrast.

With electrodes	No. 2 and	No. 1, current	=	3	Milliampères.
"	No. 2 "	No. 3, "	=	6	"
"	No. 2 "	No. 4, "	=	7	"
"	No. 2 "	No. 5, "	=	9	"
"	No. 5 "	No. 5, "	=	14	"
"	No. 5 "	No. 1, "	=	6	"

To show how useless is effervescence as a guide, the following experience (of frequent occurrence) jotted down at the time, will show. The writer was removing from the neck some fine hairs, which grew at a very acute angle with the skin, and, therefore, somewhat difficult to destroy. After applying the current for the usual length of time, the hairs were found to be still firmly attached and no effervescence had occurred. The natural impulse would have been to increase the current, but a glance at the galvanometer showed that a current of three milliampères was passing — three times as strong as was necessary. The fault lay in an inaccurate direction given to the needle, and the inability of the gases to escape to cause effervescence.

Furthermore, effervescence is not necessary for the destruction of the hair bulb. Hairs can be destroyed, as I have repeatedly demonstrated, without the slightest appearance of effervescence.

The variations in the current-strength caused, even, by different modes of applying the electrodes to the skin may be seen from the following:

Twelve cells were used. A large electrode, $3\frac{1}{4} \times 6\frac{1}{4}$ inches, was applied to the forearm, while a small electrode, $1\frac{1}{2}$ inches in diameter was successively applied, first, to the centre of palm of hand so that only one surface was in contact with skin; second, between the thumb and palm so as to be held by pressure of the thumb; and third, to the centre of palm but grasped by the fingers. In this way the amount of surface in contact was successively increased. The strength of current obtained was as follows:

1st Method	$\frac{1}{4}$ Milliamp.
2d "	$\frac{3}{4}$ "
3d "	1 "

The following experiment was undertaken to show the variations in current-strength due to variations in size of the positive electrode in conjunction with a needle inserted into a hair follicle for electrolytic purposes.

1. Small electrode. ($1\frac{1}{2}$ inch) to palm	$\frac{1}{4}$ Milliamp.
2. " " " grasped	$\frac{3}{4}$ "
3. " " " to forearm	$1\frac{1}{4}$ "
4. Large electrodes, ($3\frac{1}{4} \times 6\frac{1}{4}$ in.) to palm	$1\frac{1}{2}$ "
5. " " " " to forearm	2 "

In other words, the large electrode applied to palm gave six times as strong a current as the small electrode, etc.

One more experiment shows the different results obtained by electrodes of different sizes, construction and conditions of moisture used in conjunction with the electrolytic needle.

	Electrode covered with cotton. 1 in. diam.	Electrode covered with sponge. 2 in. diam.
1. To palm	$\frac{1}{4}$ Milliamp.	1 Milliamp.
2. To forearm	1 "	2-3 "
3. To palm	sponge allowed to become comparatively dry.	$\frac{1}{2}$ "

Here it will be seen that the current obtained with a sponge electrode, after the water had been squeezed out, as always happens after a few minutes use, was reduced one-half.

It should be stated that the smaller electrode was a polished copper disc covered with absorbent cotton, one of the best conductors. While the large one was covered with chamois-skin, and its metallic surface, as I afterwards discovered, was corroded and covered with verdigris, consequently its conducting power must have been greatly impaired. I suspect that if it had been constructed like the smaller one the differences would have been still more marked. It should be mentioned that the resistance of the skin in these experiments was reduced to a minimum by the usual methods.

A variation in the strength of the current may even be produced by the needle not being inserted to the same depth in the skin. I have seen the current doubled from this cause.

Under these conditions, then, it cannot be wondered at that the effects of electrolysis are uncertain, sometimes resulting in dermatitis and scars, and sometimes in destruction of the hair alone, without the slightest disfigurement. It must be apparent to any one that, to get the best results from electrolysis, we must have some accurate method of measuring and regulating the strength of the current. This can be done by means of the *absolute* galvanometer, which, I have found, answers every purpose, and which I now always use. By its means the current can be accurately and easily regulated, and any fluctuation in its strength immediately detected. Discovering the fluctuation, it is easy to determine the cause, and to guard against its reoccurrence. The practical results obtained I have found to be far better than formerly. Pustules can be wholly and cicatrices almost entirely, even if not absolutely, avoided. When one has once used such an instrument, providing he has a reliable one, he will be loth to give it up. No small advantage is that one learns the conditions essential for a steady current, and is thus able to prevent variations. An increase of one milliampère in ordinary electrotherapeutics is of no consequence, but in such delicate operations as electrolysis, it is of the greatest consequence. A case in point will illustrate these advantages.

It is that of a young girl who had a very abundant growth of hair upon her face, necessitating repeated operations, extending on and off over a space of two years. It so happened that the skin under her jaw was very sensitive to electricity, so that electrolysis was always followed there by more or less inflammation and scars, be as careful as I would. In contrast, to this, on the sides of her face, she could bear comparatively strong and repeated currents with immunity. Under the jaw, on the other hand, only very few hairs could be done at a sitting, and that with very mild currents. Pustules, dermatitis and fine scars were frequent effects. Since using the absolute galvanometer all this has changed. I can now do what remains to be done without any secondary inflammation, and so far as I can see without any scars whatever. And I believe it to be *theoretically* possible to always remove hairs without scars. Practically it is difficult because the requisites are absolute care and great physical endurance on the part of the operator. The endeavor should be to direct the action of the current, as far as possible, to the hair bulb and follicle alone. This can only be approximated by accurately inserting the needle and using the weakest currents for the shortest period compatible with effective practical results.

But supposing an absolute galvanometer is to be employed, what rules should be observed in performing the operation; what strength of current should be employed, and for what length of time? The directions laid down by most writers are most indefinite, and do not show an intimate knowledge of either theoretical or applied principles of electricity. A late English writer, whose article lies before me and whom I quote merely to bring out the points I wish to enforce, gives the following directions: a battery of from ten to fifteen cells is to be used; the current is to pass from ten to thirty seconds until slight frothing is produced or a wheal appears around the mouth of the follicle. It is also stated that it is not absolutely necessary that the needle should be inserted directly into the follicle, as the requisite destruction occurs if the instrument be in its immediate neighborhood, and that papules and pustules result, which remain visible for some weeks.

That papules and pustules result under these circumstances can scarcely be wondered at. There can scarcely be any better way of producing them, as well as scars, than some such method as this.

The danger of relying upon the number of cells to determine the strength of the current has already been shown. Ten to thirty seconds is altogether too long for any current generated by ten to fifteen cells of a good working battery, unless a great resistance is offered by the circuit, which cannot be

known without an absolute galvanometer; and, according to the experience of the writer, a wheal should never be produced. Any current which produces a wheal, especially one that is white and sharply circumscribed, is too strong. Furthermore, I believe it to be absolutely essential that the needle should be inserted directly into the follicle and through the papilla, but not beyond if possible, if cicatrices are to be avoided.

The writer has made numerous experiments to determine what strength and duration of current gives the best results. Before stating the specific conclusions arrived at, the following general principles may be laid down. The weakest possible current of the shortest possible duration compatible with efficiency in the time at the operator's disposal should be used. If there is much work to be done, less time can be given to each individual hair. But the stronger the current and the longer its duration, the greater certainty of after inflammation and scars. On the other hand, with very weak currents, say under one-half milliampère, the time requisite to destroy the hair-bulb is too long for practical purposes, especially if there is much to be done; for the stronger the current the shorter the time needed, and *vice versa*. As a matter of experience, and as the result of numerous observations, I have found that a current of one milliampère, passing from two to three seconds, is the best. It should be not less than one-half nor more than two milliampères. With one-half milliampère it can be easily done, but takes longer. Such a current is, perhaps, to be preferred if only a few hairs are to be destroyed. With more than two milliampères pustules and scars are almost sure to result. It must be understood that the stronger the current, the shorter time must it be allowed to pass, and the greater the pain.

My plan is always to watch the needle of the galvanometer, and if it swings towards two milliampères, to shorten the duration, and if it goes beyond two milliampères to immediately break the current. I do not mean to say that it is impossible to use stronger currents without causing bad after-effects, but it is very difficult to do so, and the current must be broken almost immediately after being made. With a current of one milliampère, three seconds is amply long enough for the current to flow. This I have repeatedly determined with watch in hand. If the hair be not destroyed in that time, the reason therefor will almost always be found to be that the needle has not been accurately introduced within the hair follicle so as to hit the bulb.

Of course the stronger the current and the longer it be allowed to act the easier it is for the operator to successfully work, and hence there is always an inducement to use strong currents. If a current of one milliampère acting for three seconds will decompose the tissue within a radius of, say, 1-50 inch, for example, a current of three milliampères will decompose all the tissue within 3-50 inch, or thereabouts; and therefore with the latter current much less care need be employed in introducing the needle, as it has only to be placed somewhere near the hair, and all the neighboring tissue must succumb, hair and all, hence cicatrices.

For this reason the needle should be accurately inserted into the follicle and papilla. If it is placed simply in the neighborhood of the latter, all the intervening tissue must necessarily be exposed to the electrolytic action. Greater destruction of tissue than necessary will then be occasioned, and pustules and scars must result.

Sponge electrodes are very undesirable, as their conducting power rapidly changes as the water becomes squeezed out.

There is one more practical point which should be mentioned. The patient should never be allowed to hold the positive electrode in the hand, as is usually advised. What between the great resistance offered by the palm of the hand involving the necessity of keeping the thick dry, skin, thoroughly soaked with water, and the unevenness with which a patient presses with the electrode, it is impossible to maintain anything like a steady current. If the current hurts, the patient is sure to let up on the electrode. Under such conditions I have sometimes found it impossible to do the operation at all, the galvanometer at times marking no current and then again jumping to three and four milliampères. A large electrode, covered either with chamois-skin or a thin layer of absorbent cotton, not sponge, should be fastened to the forearm, as the most convenient place. It is hardly necessary to refer to the danger of using the positive instead of the negative pole in connection with the needle or destroying at one sitting hairs situated close together, as these points have been referred to by other writers.

The powerful electrolytic action of electricity on tissue, and the possible disastrous effects of strong and long continued currents may be seen from the following experiments, out of a number of others made by Dr. T. D. Davis,[1] some time ago, in connection with another operation. The first experiment was made with a 30 cell Grenet battery, the second with a 15 cell Bunsen battery.

(1) Two steel needles, thickness of knitting needles, were introduced into the tissue of a healthy liver within half an inch of each other. Immediately afterwards bubbles of gas commenced to issue from the cut surface of the liver, which was nearer to the points of the needles than the place of their introduction. In four minutes the needle connected with the negative pole became very loose, and bubbles of gas escaped around its point of entrance. In five minutes the needles were withdrawn, the negative one coming away easily, while the positive one, which was blackened and roughened, was firmly adherent. On cutting across the track of the negative needle, a cavity, one quarter by an eighth of an inch in diameter, was discovered, surrounded by a darkened gelatinous tissue, one-eighth of an inch in thickness. Extending from this to the point where most of the gas escaped was a mass resembling that surrounding the cavity, looking more like softened glue than healthy tissue. The track of the positive pole was black and charred, but the tissue immediately surrounding the point was firmer and whiter than in other parts.

(2) A cat was put under the influence of chloroform and the needles were introduced into the right thigh one inch apart. Soon the fizzing sound was heard, which continued until the needles were withdrawn, at the end of ten minutes. The tissue was softened around the negative and much hardened around the positive needle. The needles were then introduced into the left thigh of the same animal, and retained there for ten minutes. In the post-mortem examination, several days later, the skin on the right thigh was found ulcerated for an inch in diameter. The muscles were separated down to the heel but not to the bone. There was a cavity under the skin large enough to hold a walnut. The left thigh presented similar appearances, the cavity being as large as an egg, and the muscles separated down to the bone, as well as softened and eaten away. Part of the femur was denuded of periosteum, but not eroded.

These, of course, are the effects of powerful currents long continued, but the action from weak currents is the same in kind, differing only in degree, and these experiments show how it is possible to produce on the face irreparable injury unless care be used.

[1] Philadelphia Med. Times, October 2, 1871.

REPORT ON BACTERIOLOGY.

BY HAROLD C. ERNST, A.M., M.D., (HARV.),
Demonstrator of Bacteriology in the Medical School of Harvard University.

FURTHER investigations upon malaria by Golgi[1] have been made by the observation of forty cases mostly of the quartantype. Out of these forty cases but two gave negative results in the observation of the blood. In all the other cases the characteristic "Plasmodia" were found, the results being tabulated as follows:

I. Plasmodia only were found in the interior of the red blood-corpuscles in four cases.

II. Plasmodia and pigmented bodies in the red blood-corpuscles in eight cases.

III. Only pigmented bodies in the red blood-corpuscles in twenty-seven cases.

IV. Plasmodia in the red blood-corpuscles and free half-moon shaped, oval or circular bodies in one case.

In most of the cases there were also found the pigmented bodies described by Marchiafava and Celli.[2] In one case the plasmodia showed amœboid movements after four and one-half hours at a temperature of 9° to 10° C. The pigmented corpuscles were also seen to have amœboid movements. Golgi considers the pigmented bodies and the plasmodia (unpigmented) to be distinct, and finds the pigmented bodies to be especially characteristic of the quartan type of fever — considering the occurrence of plasmodia in this type as a complication. The quantity of the organisms found seems to bear a distinct relationship to the severity of the attack. The condition of the pigmented bodies as seen under the microscope seems to this observer to indicate the stage of the disease, and one can prognosticate the attack by observing how near complete their growth is, as indicated by their situation in the blood-corpuscles and amount of subdivision. These conclusions, however, are only applicable to the quartan type as yet.

TUBERCLE-BACILLI.

The question as to the positive diagnosis of this organism by the staining method of Koch-Ehrlich has received renewed attention.[3] The conclusions from the results thus far obtained seeming to be that occasionally the presence of organisms in fat-bearing materials, prevents the decolorizing action of nitric acid, and that therefore there may be occasions, as in the case of smegma-bacilli, where there is an imperfect application of the staining-method, and where confusion might arise. The work is not by any means complete, however, and does not destroy the value of the usual staining method for the clinical recognition of the bacilli of tuberculosis.

ULCERATIVE ENDOCARDITIS.

Wyssokowitsch[4] undertakes to produce this disease in animals by using pure culture of the organisms derived from pus in acute inflammatory conditions. The results were positive only when artificial irritation of the cardiac valve was practised. Ribbert[5] succeeded in producing ulcerative processes in the valve of rabbits' breasts by the injection of very large quantities of the staphylococcus aureus into the circulation. In an article upon the same subject by Bramwell,[6] experiments by Hare are recorded. This experimenter obtained negative results so far as the artificial production of the disease is concerned, but succeeded in obtaining from the material employed pure cultures of two organisms, one, a micrococcus resembling very strongly the staphylococcus pyogenes aureus, and the other, a short straight bacillus occurring in immense numbers. Wyssokowitsch[7] and Orth[8] have taken the subject up again, but without reaching any very definite results.

YELLOW FEVER.

Freire has published a very elaborate work containing the results of his observations upon this subject and his methods.[9] He claims to have established that the "microbe xanthogenicus" is introduced into the system by the respiratory and digestive apparatus, that from these points of entrance it passes into the circulation and thence into all the organs of the body; it is found with equal facility in the brain, muscles, kidney, spleen, pancreas, blood, lungs, urine, bile and vomit. With regard to the blood the organism is found most largely in the capillary circulation, rather than in the larger bloodvessels. The organism is very easy of detection in the urine and bile by simply placing a drop of either of these fluids upon a slide and examining with a power of from 450 to 800 diameters; blood must be treated with a weak solution of sulphate of soda before the organisms contained in it are easily visible. The period of incubation after infection is short, and the development of the organism is very rapid. The "cryptococcus xanthogenicus" appears under a diameter of 740 as minute refracting bodies, sometimes looking like black points and at other times showing a luminous spot in the center (differences of focussing). There are also yellowish masses with yellowish spots scattered about which are considered to be the scattered cells of the cryptococcus. The cells have a very rapid movement at the beginning of their development which becomes less as the cells increase in size. These cells, when mature, contain granules which are pigmented green or yellow. These finally burst through the cell-envelope and proceed to form new cells by constant increase in size. Occasionally the spores are scattered without order; sometimes they stick irregularly to the pigment, and sometimes they form regular figures, assuming shapes like a pineapple or a pear. Under cultivation the organism is found to be aërobic: it flourishes well in culture-media of bouillon, milk or gelatine solutions, forming in old cultures a yellow or even black layer upon the surface of the fluid; the ordinary temperature of the room is sufficient for its development. Methyl-violet in aqueous solution gives a very strong violet color to the cells.

Many inoculation experiments with material from yellow-fever patients — blood, urine — were practised upon animals, with the result of finding guinea pigs susceptible, whilst birds, pigeons, and chickens seemed to be refractory to the toxic effects of the organisms. The "cryptococcus xanthogenicus" was found in large

[1] Sulla Infezione Malarica. Arch. per le Scienzhe Medice, 1886, No. 4.
[2] Fort. d. Med., 1883, No. 18, 1885, Nos. 11 and 24.
[3] Alvarez et Tavel. Recherches sur le Bacille de Lustgarten. Arch. de Phys. norm. et Path., 1885, No. 17. Klenperer. Ueber Syphilis, und Smegmabacillen. Deut. Med. Woch, 1885, S. 809. Bienstock. Fort. d. Med. 1886, S. 193. Friedländer, Ibid, S. 196. Gottstein. Ibid, 1885, S. 627.
[4] Cent. f. d. Med. Wiss., 1885, No. 33.
[5] Fort. d. Med., 1886, S. 1.
[6] Am. Jour. Med. Sciences, July, 1886.
[7] Aus dem Path. Inst. in Göttingen.
[8] Virch. Arch. Bd. 103, II.
[9] Doctrine Microbienne de la Fievre Jaune et ses Inoculations Preventives. Rio de Janeiro. Imprimerie Nationale, 1885.

numbers in the earth of cemeteries where persons dead of yellow fever had been buried, and in the air of yellow-fever hospitals. The attenuation of the virulent strength of the organism of yellow fever is obtained by its exposure to a low temperature — 15° to 20° C. for a few days — after which exposure injections into guinea pigs produces little or no effect. The virulence may be restored by keeping the culture at from 38° to 50° C.; after a few days' exposure to this temperature, the full toxic strength returns, as proven by inoculation experiments. Acting upon these facts, Freire undertook a preventive inoculation against yellow fever with an attenuated virus.

Finding that the virulence of the "cryptococcus xanthogenicus" obtained in cold weather was less than that in warm weather, or during the time of an epidemic, he preserved cultures of the former, and used them upon man, of course being encouraged to do so by previously-completed extensive experiments upon animals. The results of these experiments seem to be favorable to his assertions, that is, that thus far, no case inoculated by him against yellow fever is as yet reported to have died of the disease.

HYDROPHOBIA.

The special interest excited in this disease by the announcement of Pasteur in regard to it has led to the endeavor, on the part of many observers, to isolate and identify the bacterium, which is in all probability the active factor in the production of the disturbance. The results thus far obtained are eminently unsatisfactory, however. Fol and Dowdeswell each think they have found a micrococcus which is the specific organism of rabies, but neither of them bring forward any evidence other than the occurrence of the bacterium in animals dead of the disease as a basis for their assertions. Pasteur himself has failed also to find anything which he is disposed to consider the "materies morbi" in this instance. Thus far there has been not only no bacterium connected with the disease, but no systematic work in confirmation of Pasteur's method of preventive inoculation has been published. Many announcements of "Pasteur Institutes" have been made in the daily press, but very little has come out with any substantial basis to it.

BACTERIOLOGICAL OBSERVATION OF WATER.

This is one of the most important of the practical applications of bacteriological science, and is being rapidly developed. A systematic observation of the limitations of chemical analysis, and the amount of evidence to be obtained in addition as to the potability of any water by the further examination by bacteriological methods, has yet to be made Such evidence would be exceedingly valuable, and it will not be long before it will be supplied. Meade Bolton [10] has paid some attention to this point, concluding that it is possible for a better decision to be given as to the safety of any given specimen of water by the employment of both methods of analysis, and in certain cases, that the observation of the bacteria and the determination of their species is the only way by which approximately exact results can be obtained.

Other first-rate recent work in the same direction is to be found in the first volume of the *Arbeiten das den Kais. Gesundheitsamte*, 1886.

[10] Zeitschrift für Hygiene, 1886. S. 76.

METHODS OF PRESERVING COLONIES FROM PLATE-CULTURES.

Garrè [11] suggests that the portion of the gelatine containing the colony to be kept, be cut out, and transferred with a sterilized spatula to a slide. The preparation may then be placed in a drying apparatus, or under a glass-bell, and dried to one-half or less of its original bulk. A cover is then to be fastened on with concentrated glycerine jelly. In this way, the colony may be preserved for an almost indefinite length of time for microscopic examination and demonstration.

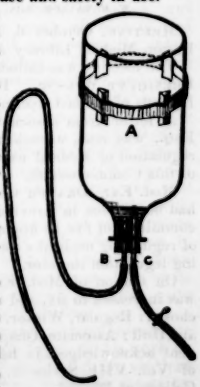
Plaut,[12] writing upon the same subject, suggests the cutting out of the colony with fine, sterilized scissors, and its transference to a slide moistened with a very small drop of pure water. Then slight warming of the slide to settle the gelatine, but not enough to melt it, and finally, covering the whole with a cover-glass fastened by a ring of dammar-lac, the advantages claimed for this method being that the colony is not only preserved for microscopic examination, but may also be used to propagate future cultures by the simple melting of the dammar-lac with a heated needle, and the removal of the cover-glass.

New Instruments.

A SIMPLE APPARATUS FOR WASHING OUT THE BLADDER.

BY FRANK HOLYOKE, M.D., HOLYOKE, MASS.

THE accompanying diagram illustrates an apparatus for washing out the bladder, which combines cheapness in construction, with ease and safety in use.



An eight or twelve ounce, glass bottle, A, has its bottom cut off; and a cork perforated by two glass tubes, is now introduced and sealed, to prevent leakage of air or water. To the glass tube, B, by five feet of rubber tubing, is attached a rubber catheter. To the evacuating tube, C, is attached one foot of rubber tubing clamped by a bull-dog forcep or patent clothes-pin.

This safety of this apparatus lies in the fact that the evacuating tube reaches within the neck of the bottle one-half inch beyond the injecting tube, so that, when held upright, there is no possible chance, while emptying the bottle through the former, for air to enter the latter.

Four pieces of cork held at regular intervals by a narrow rubber band prevent the bottle from rolling off the table, while the patient — either standing or seated — introduces the catheter; upon the entrance of which within the bladder the bottle is held as represented and brought below the level of the bladder. The

[11] Fort. d. Med., 1886, S. 392.
[12] Fort. d. Med., 1886, S. 419.

bladder being thus emptied, the forceps is removed from the evacuating tube, and all the urine passes into a vessel except the half-thimbleful that remains in the neck of the bottle, to guard against the entrance of air within the injecting tube.

The clamp is now replaced and the fluid to be used for injection is poured into the bottle which is slowly raised to a proper distance above the bladder, which gradually fills; the operator readily observing through the glass that it be not raised so high that the level of the fluid falls below the end of the glass tube, B.

Having once introduced the catheter, this process of filling and emptying may be repeated as often as desired, without laying down the bottle, by the careful raising and lowering of which, the distension of, and pressure within, the bladder, may be regulated.

This instrument I made for a man who recently came under my care, suffering with chronic cystitis. He declares that it is easily managed and practical:— for in this apparatus we have no syringe, no tap to turn, no injecting nozzle which has to be repeatedly connected and disconnected with the catheter, and no doubt about its safety, for we see what we are doing.

A ready way to remove the bottom of a bottle is to file a groove, with a three-cornered file wet with turpentine, deep enough to hold in place a piece of strong twine. The twine is then drawn to and fro until the glass becomes hot. If now the bottle be immersed in cold water, the bottom separates along the filed groove.

Reports of Societies.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

W. H. TAYLOR, M.D., RECORDING SECRETARY.

MEETING, October 6, 1886, at the rooms of the Boston Medical Library Association.

The meeting was called to order at 12.30, P. M., by PRESIDENT WINSOR. Present, eighteen members. Records of the last meeting were read and approved.

A letter from associate member H. W. CHAPIN, ESQ., was read, advocating some movement toward regulation of medical expert testimony in the courts of this Commonwealth.

Med. Exr. DRAPER made some remarks on what had been done in previous efforts, and moved that a committee of five be appointed to consider the subject of regulating medical expert testimony, and of obtaining legislation therefor.

On motion of Med. Exr. HOLMES, this committee was increased to six, and the following members were chosen: Regular, Winsor, Chairman, Draper, Gleason, and Holt; Associate, Chaplin and Tyndale. The President acknowledged, in behalf of the Society, receipt of Vol. VIII, Series 3, of the Transactions of the College of Physicians of Philadelphia.

Med. Exr. HOLMES read a paper on the case of Carrie Whitney, of Boston, found dead in his district. The ligamentum nuchæ was ruptured, and Dr. Holmes believed that death was due to hæmorrhage into the spinal canal, with pressure on the cord. There was no mark of external violence. The specimen was exhibited, and some discussion took place.

DR. DRAPER reported a case where the ligamentum nuchæ was ruptured, with fracture of transverse processes, and separation of spinal processes of the vertebræ. Death was due to spinal hæmorrhage and pressure on the cord. The nature of the accident was known, though there were no marks of external violence.

DR. PRESBREY reported a case of spinal hæmorrhage and death from a blow of the fist under the ear.

Cases more or less similar to that of Dr. Holmes were reported by various members.

Med. Exr. TOWER reported a case of poisoning by two ounces of commercial hydrochloric acid, taken with suicidal intent. There was pain and vomiting, and purging of blackish-brown and bloody matters. The mucous membrane of the stomach was thoroughly cauterized, and was black in color.

Med. Exr. ADAMS reported the appearances in a case of alleged rape of a child ten or eleven years of age, and also narrated a case to show the fallibility of the sign of alcoholic odor in the breath in cases of alcoholic poisoning.

NEW YORK STATE MEDICAL ASSOCIATION. FIFTH DISTRICT BRANCH.

SECOND Annual meeting, held at Everett Hall, Brooklyn, October 12, 1886.

MORNING SESSION.— THE PRESIDENT'S ADDRESS

was delivered by DR. J. G. PORTEOUS, of Poughkeepsie. In it he congratulated the Branch and the parent Association on the flourishing condition of the organization, and paid a tribute to the illustrious dead of the year, Drs. Austin Flint, Frank H. Hamilton, and Desault Guernsey, the latter being President of the Fifth District Branch at the time of his decease.

DR. JOSEPH C. HUTCHINSON, of Brooklyn, read a

BIOGRAPHICAL NOTE OF THE LATE DR. FRANK H. HAMILTON.

DR. AVERY SEGUR, of Brooklyn, read a paper on

SOME RECENT IMPRESSIONS OF MEDICINE IN ENGLAND,

in which he spoke of the history of the Royal College of Physicians and the Royal College of Surgeons, the study of Medicine in England, the qualifications required for licensed practitioners and those entitled to the degrees of Doctor or Bachelor of Medicine, the clinical advantages afforded by the great London hospitals, the Croonian, Gulstonian, and Lettsomian Lectures, and the many advantages enjoyed by the profession in Great Britain, as exhibited in the British Medical Association and its Branches.

AFTERNOON SESSION.

DR. H. A. POOLER, of Goshen, Orange County, read a paper on

THE MILK SUPPLY OF LARGE CITIES AND THE IMPROPER MODE IN WHICH IT IS CONDUCTED.

Having spoken at considerable length of good cow's milk, and in what respects it resembled and differed from human milk, he referred to the abnormal conditions of milk. There was only one period, he said, at which a healthy cow will secrete unhealthy milk, and that is after parturition, when it contains colostrum. Such milk taken by the young or invalids, might produce very harmful results. It is certain that the milk would not be entirely free from these cells ten days after the birth of the calf; but the farmer, not

knowing the pathological condition of the milk at such a period, or at least the length of time that it is affected, usually saves the sixth milking, which occurs only three days after parturition. The milk of the entire dairy may thus be contaminated by the diffusion of the colostrum through it.

In speaking of the adulteration of milk, he said that many foreign substances have been added to it, but by far the most common forms of adulteration are the removal of fat and dilution with water. Pure milk furnishes an indication of the amount of fat required by the human being in the large proportion of butter fat to its other solid constituents which it contains. Besides performing certain purely mechanical offices, fat is essentially concerned in many of the chemical and vital processes of the body. It forms the nucleus of all cellular growth, renders important assistance to the digestive fluids in the digestion of other principles, is actively concerned in exciting the changes that take place in the nitrogenous principles, and has much to do with the formation of bile and blood; while fatty matter forms a great part of the brain, and the entire nervous system. As a heat-producer, fat also stands pre-eminent, and it is mainly from the fat stored up in the body that sustenance is derived when the supply is temporarily cut off or the power of digestion is impaired by sickness. Furthermore, it is believed that nature has especially adapted butter fat to the digestion of infants. Altogether, therefore, it is essential in large quantities to the proper nutrition of young children.

Dr. Pooler then quoted as follows, from the report of Professor C. F. Chandler (made with the assistance of C. E. Munsell, Ph. B.), published in the second annual report of the New York State Board of Health (1881–82): "While a large proportion of the milk sold has been but moderately watered and skimmed, and is still above the standard of the poorest milk (two and one-half per cent. of fat), much of the milk has been *extended* and skimmed far below this standard. So openly are these frauds practised that 'creameries' have been established in many localities, the names and locations of seventy-three such establishments being known to the writer; of which sixty-three are known to send skimmed milk to New York City, all of which is sold as whole milk on its arrival." Later reports of C. E. Munsell, Ph. B., showed, from analysis, that this skimming amounted to from about 29 to 78 per cent. of the fat. Now, said Dr. Pooler, you can readily see that the mother receives this milk into her home as whole, pure milk, and dilutes it one-half to three-fourths. What then does the child have to live upon, when nature says that infants must have 3.38 per cent. of milk fat for their sustenance and development.

Up to 1883 there was no law in the State prohibiting the shipping and sale of skimmed milk; but the passage of such a law was then secured, and milk inspectors were placed upon the milk trains. Dr. Pooler told the Judiciary Committee of the Legislature that if they would pass the law, he would guarantee to reduce the mortality among young children in the city of New York at least three thousand, and he was able to keep his promise. In 1879 the mortality in children under five years was 12,777, or about 50 per cent. of the births of that year. This was before the milk adulterators carried on their work so extensively as afterward. In 1880, however, the mortality in this class increased to 14,650, and while from 1878 to 1879 it increased only 300, the increase in the number of deaths from 1879 to 1880 was 2,000. The mortality in 1881 was 17,737, an increase of 3,000 over 1880, and about 75 per cent. of the births. In 1882 the number of deaths was almost the same as in 1881; but if it had not been for the work that was done in the autumn of 1882, the mortality would have reached nearly 20,000; a close watch being then kept upon the dealers. In the winter of 1882 and 1883 the skimmed-milk bill was passed and enforced, and notwithstanding many discouraging circumstances the mortality was reduced from 17,737 in 1881, and 17,520 in 1882, to 13,856 in 1883, a reduction of some 4,000.

But, unfortunately, in 1884 the good work was interfered with by the politicians. Up to this time the labor performed had been almost all voluntary services. An appropriation was therefore asked from the Legislature; but while this was granted, a Dairy Commission was also appointed to take charge of it, and this commission was manipulated so as to form a part of the great political "machine." There were other political changes also, and the withdrawal of Professor Chandler from the head of the Metropolitan Health Department, an irreparable loss. Hence the mortality in children under five years increased from 13,865, in 1883, to 15,272 in 1884, an increase of nearly 2,000. Dr. Edson, of New York, and Dr. Bartley of Brooklyn, had, however, done all in their power, with the means at their command, to keep the evil in check, though the small force available for this service was quite inadequate to the demands upon them.

Dr. Pooler spoke next of the adulteration of milk through the cow, by feed and otherwise. The refuse of about nine thousand distilleries, breweries, and malt-houses in this country is nearly all sold to feed the cows that produce the milk upon which the infantile population principally subsists. The natural food of the cow is grass, either green or dried, and when she is fed exclusively upon it, her fresh milk is generally neutral in reaction. On the contrary, the milk of cows fed, either wholly or in part, upon food other than the natural is almost invariably acid. Dr. Mayer, of Berlin, found the following results: "Of cows fed with brewers' grains, red potatoes, rye bran, and wild hay, in five instances the milk was slightly sour, in one, very sour. Of forty cows fed with potato mash, barley husks and clover, and barley straw, in ten examined the milk was sour, in three very sour. From five cows fed by a cow-feeder on luke-warm bran-mash and hay, in four the fresh milk was quite neutral, in one it was decidedly alkaline."

All physicians know how easily affected infants are by acid milk, and Dr. J. Lewis Smith, in his work on diseases of children, says that milk used for children should always be alkaline. If it is acid, as shown by the proper test, it should be rejected. Dr. Hassal, in his standard work on "Food and its Adulterations," says: "As is well known, a very considerable number of the cows which supply London with milk, are kept in various confined and unhealthy places in the metropolis. Such cows are seldom turned out to grass; the system adopted being altogether artificial and unnatural. Brewer's grains and distiller's mash form much of their food. These stimulate the animals unnaturally, and under this stimulus larger quantities of

milk of inferior quality are secreted. The cow quickly becomes worn out and diseased in consequence. It has been shown also by experiment that brewer's grains afford a most favorable soil for the development of the microbe of anthrax, and in 1879 an outbreak of this disease occurred in England, in a district which had previously been free from it, where it was found upon investigation that all of the cattle infected had been fed upon grains from one particular brewery.

The facts show that the action of brewer's grains is to impoverish the milk in its most essential constituent, and largely increase its most objectionable ingredient, caseine. When the fat is not equal to the normal amount, the milk forms a hard curd in its coagulation, which is known to the skimmed-milk cheesemakers as "hickory curd"; the formation of this being directly due to the abstraction of fat. It is the cheapness of the brewer's grains, together with the large amount of milk which the cows give when placed upon them that induces farmers to purchase this food. The proper food, wheat-middlings or wheat-bran, costs twenty dollars a ton, and will yield less milk (though of far better quality), than a ton of brewer's grains which costs only from four to six dollars. Dr. Pooler also spoke of the evils resulting from the transportation of milk from long distances. (Dr. Pooler was assisted by E. W. Martin, Ph. D., Chemist to the New York Board of Health, who projected upon a screen a number of fine micrographic illustrations).

In the discussion which followed the reading of the paper, Dr. A. N. Bell said that if he was correctly informed, milk from diseased cows not infrequently contains a large amount of fat, and that this was particularly the case with milk from animals suffering from rinderpest. We must be on our guard, therefore, against this source of danger also.

DR. ALFRED L. CARROLL, of New Brighton, Staten Island, read a paper on

LEPTO-MENINGITIS INFANTUM.

The clinical history and pathology of acute hydrocephalus, he said, are involved in considerable obscurity; the symptomatology varying, on the one hand, in cases having a similar morbid origin, or, on the other hand, closely corresponding in instances due to different kinds of lesions. It seems to be the general opinion that recovery from a meningeal attack in childhood precludes the idea of tubercular deposit; but whether non-mortal forms of acute hydrocephalus (not secondary to disease elsewhere) are always dependent on inflammation of the pia, or whether there may be other less serious pathogenetic factors, is a question still open to discussion.

Huguenin, in Ziemssen's Encyclopædia, affirms that cerebral hyperæmia is the exciting cause in all instances save those occurring in marasmic conditions supervening upon chronic digestive disorders; and in these, forced to admit an anæmic state of the brain, he assumes "partly a hydrocephalus *ex vacuo*, in consequence of the diminution of the brain, partly the result of the long-continued weakness of the circulation, with greater emptiness of the arteries than of the veins." In the former class of cases he intimates that we are forced to assume a true inflammatory process as the cause of the effusion into the ventricles, but at the same time states that it is impossible to say, during life, when the hyperæmia ceases and the inflammation begins. But in his description of the pathological anatomy it is admitted that the pia contains a moderate amount of blood, or is anæmic; no traces of arterial hyperæmia can be found. We are forced to assume that it disappeared at the moment of death.

J. Lewis Smith, describing tubercular and simple meningitis conjointly, speaks of the "inflammatory action" as usually confined to the pia mater, and includes purulent meningitis of the convexity apparently as a more intense form; adding that serous distension of the lateral ventricles is a common result in either variety of the disease. Vogel, on the contrary, asserts that acute hydrocephalus never occurs in combination with simple meningitis, but invariably supervenes upon tuberculous meningitis.

Other authors either deny a non-tubercular origin of acute hydrops of the ventricles, or, at all events, ignore the affection which Huguenin endeavors to differentiate; an affection of which well-defined examples are not unfrequently encountered, but wherein we are asked to "assume" an ante-mortem hyperæmia which suddenly changes to a post-mortem anæmia, and an inflammatory process which does not leave behind it the ordinary traces of inflammation.

As regards the first of these assumed phenomena, all pathological investigations tend to show that we are much more likely to be misled by a post-mortem fulness of the intra-cranial vessels where previous anæmia has existed than to fall into the opposite error. Long ago, the classical experiments of Kussmaul and Tenner (New Syd. Soc., Vol. V.), led them to the conviction that, "from the quantity of blood contained in the skull after death, it is seldom possible to draw certain conclusions with respect to the quantity contained during life"; and Moxon (Croonian Lect., on the Influence of the Circulation upon the Nervous System, 1881), states that, "no degree of redness or pinkness, or overfulness of blood about the brain or its membranes can prove that there was any morbid state of circulation within the head before the act of dying."

On the other hand, although the mere so-called "determination" of blood, caused by local irritation, may speedily pass away, the evidences of inflammation are usually regarded as persistent and unmistakably recognizable after death. And these evidences lie, not in simple fulness of the larger vessels, but in the crowding of the smaller ramifications with coherent corpuscles, even in an early stage of the inflammatory process, whilst in a more advanced condition exudation-products are discoverable. In inflammation of the pia of undoubted character, this membrane is lacerable and infiltrated; the arachnoid thickened and opaque; fibrinous exudation being marked. In the disease described by Huguenin, there is no effusion between the dura and pia, nor in the meshes of the latter, the outer surface of which is "usually remarkably dry"; there is no exudation at the base; the ependyma of the ventricles shows no change, macroscopic or microscopic. The only significant morbid appearance is a turgescence of the choroid plexuses, sometimes with punctiform extravasations. In brief, we have to deal with a disorder of which the pathological features are more or less rapid accumulation of fluid in the ventricles, with a specified morbid condition of the choroid plexuses; its clinical manifestations (by no means uniform), convulsions, unconscious-

ness, paralytic symptoms, and disturbances in the tract of the pneumogastric and splanchnic nerves.

The known causes of serous effusions are usually found in anæmic conditions, or in mechanical impediment to the return of venous blood. Thus, dropsies of different sorts are common in the hydræmia or "hypalbuminosis" of general anæmia; from malarial cachexia; from feebleness of circulation in dilatation of the left cardiac ventricle; from aortic insufficiency; from pericardial adhesions; or, on the other hand, from valvular insufficiencies in the right heart, or any intermediate cause of capillary and venous stagnation. Within the cranium, such stagnation is especially likely to concur with arterial anæmia, since, even allowing for the balance ordinarily maintained by the ebb and flow of the cerebro-spinal fluid, atmospheric pressure tends to retard the egress of venous blood. Moreover, the outlet from the choroid plexuses, through the venæ Galeni and straight sinus, has the additional obstacle of a rectangular diversion at the torcular Herophili. It has long been known that in animals bled to death the intra-cranial vessels may retain their contents after all the rest of the system is drained. Meningeal venous turgescence of this kind, "ex vacuo," is familiar as arising from atrophy of the brain, and in other conditions associated with arterial anæmia. Furthermore, the pia gradually diminishes in vascularity from the convexity toward the base, until, at the crura and pons, it is almost devoid of vessels. Finally, we have the authority of Nothnagel for doubting whether active hyperæmiæ can limit themselves to circumscribed regions of the brain; whilst localized ischæmia about the basal ganglia is a more probable event, originating in arterial spasm, reflected irritation, or insufficient cardiac action.

Having devoted considerable attention to the phenomena and mechanism of effusion into the ventricles, Dr. Carroll went on to say that as to the clinical phenomena of acute hydrocephalus, it is well known that convulsions are oftener due to cerebral anæmia, rapidly induced, than to any mechanical alteration of pressure upon the brain. Epilepsy is commonly conceded to be of anæmic origin, and Moxon has observed that in this disease the convulsive seizure is often preceded by a momentary arrest of the pulse.

Niemeyer affirms that "the so-called symptoms of pressure in apoplexy, tumors, the various forms of hydrocephalus, and other diseases encroaching on the intracranial space, are not immediately referable to the pressure on the brain substance, but to the consequent anæmia," and he farther points out the false interpretation usually given to increased pulsation of the carotids, which he defines as an essential consequence of cerebral anæmia.

Another common mistake is to regard the vascular appearance of the external surface of the head and face as indicative of the intra-cranial condition. In states of general anæmia, facial pallor and cerebral anæmia are twin results of the same cause; but when the blood is pumped up toward the head in due amount, a localized ischæmia within the skull is apt to divert an increased flow into the external carotid and those branches of the internal carotid which arise before its entrance into the cranial cavity.

It is extremely difficult to discriminate during life between this, so to speak, idiopathic leptomeningitis and other meningeal affections of childhood. In early infancy, and after exhausting disease, the secondary "hydrocephalus ex vacuo" is to be considered rather as a mode of dying from other complaints, and the past history of the case (oftenest one of protracted diarrhœa) will afford a clue to its nature. True meningitis, commonly affecting the lateral part of the convexity, arises by traumatism or extension from adjacent foci, as in internal otitis, caries of the cranial bones, mastoid inflammation, phlebitis sinum, etc., and although in most examples its diagnosis may be made with some confidence, it is well to know that not a few cases occur in which the symptoms simulate those of acute hydrocephalus.

Having briefly referred to his extensive post-mortem experience, which, he said, had induced him to believe that tubercular meningitis seldom if ever occurs except as a part of a more generalized deposit, and that the majority of the cases ascribed to this cause in death certificates, but not verified by necropsy, are really examples of Huguenin's leptomeningitis, Dr. Carroll summed up his argument by saying that he was convinced that a malady quite frequently occurring in childhood, and often erroneously reported as tubercular meningitis; characterized by serous distension of the ventricles, and variously described under the names of "simple meningitis," "leptomeningitis," and "acute hydrocephalus," but by most writers ascribed to hyperæmia and inflammation, is, on the contrary, essentially due to cerebral anæmia; that the principal and most significant morbid factor is a varicosity of the choroid plexuses, sometimes extending to those of the fourth ventricle, exerting Moxon's "stop-cock" action, perhaps, in many cases, and thus aggravating the arterial anæmia which gave it birth.

In conclusion, he submitted a microscopic preparation exhibiting the condition of venous and capillary stasis met with in these cases.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated meeting, October 18, 1886.

PRESIDENT'S ADDRESS.

On calling the Association to order, the President, Dr. Charles H. Leale, made a brief address on the resumption of the active work of the Society after the long summer vacation, concluding his remarks with a feeling allusion to the death of Professor Hamilton, which had occurred since the last meeting.

RESOLUTIONS ON THE DEATH OF DR. FRANK H. HAMILTON.

The Vice-President, Dr. John Shrady, offered the following resolutions, which were unanimously adopted:

Whereas, It has pleased the Almighty Disposer of Events to remove from the sphere of his usefulness our much-respected co-worker, Frank Hastings Hamilton, M.D., LL.D., and

Whereas, The New York County Medical Association desire to express a sense of their bereavement, in common with the many organizations with which he was connected; therefore, be it

Resolved, That the fulness of his days has been a record of a well-spent life; and that his work has adorned the surgical annals of America, borne his name beyond the borders of our hemisphere, and added to the solid contributions of medical literature.

Resolved, That as a scholar in his chosen science,

he has won a place among the worthies of all tongues; and that he has conscientiously weighed all his statements, and given to the world the results of a ripe experience and a most painstaking discrimination.

Resolved, That his professional life has been gauged by the strictest regard to the right; that his loyalty, ever unimpeached, was never expended upon the unworthy, nor his unswerving rectitude ever challenged, even by the captious multitude.

Resolved, That the memory of his many virtues will ever linger with us, and that we tender to his family our sympathies, assuring them that his humanity, his sterling merit, and his valuable counsels have not been unappreciated by those who had the honor of association with him.

DR. FREDERIC S. DENNIS read a paper on

SOME POINTS OF SPECIAL INTEREST IN THE TREATMENT OF COMPOUND FRACTURES, INCLUDING A REPORT OF OVER FIVE HUNDRED CONSECUTIVE CASES.

He said that in compound fractures, while absolute cleanliness is essential, and extension necessary, the rule should be adopted that no fixation apparatus should be allowed to remain in position longer than eight days without an inspection of the parts. Otherwise, the result might not be satisfactory, and he gave some illustrative instances. The seat of fracture should be inspected at the end of eight days, and then at ten days, after which the dressing could be allowed to remain untouched as long as was required. He said he was more and more convinced, as time went on, of the great importance of the first dressing in compound fractures, and this should be made with the same care and attention to detail as in cases of resection of bones or laparotomy. The treatment consisted, first, of securing perfect asepticism; and second, of the application of an appropriate plaster-of-Paris support. For some time past he had instructed the ambulance surgeons in his service at the 99th Street Reception Hospital, to make antiseptic irrigations, and apply antiseptic dressings in all cases of compound fractures before lifting the patient into the ambulance, and the results thus secured had been extremely satisfactory.

Dr. Dennis then went on to call attention to a number of points which had especially interested him in connection with the treatment of this class of fractures. The first of these was

(1) *Meningeal Hæmorrhage.* In cases of fracture of the skull, when this occurred, it had hitherto been the common practice among surgeons to ligate either the common or the external carotid artery. In a number of instances, however, he had been successful in controlling the hæmorrhage without resorting to this procedure. In the first of these cases that he referred to, he removed the bone to the extent of about six inches, and endeavored to grasp the middle meningeal artery with the forceps. On account of the receding of the dura mater, however, he was unable to accomplish this until he ran a tenaculum through the dura, and then brought it out in such a way as to include and raise the lacerated and bleeding vessel with it. By this means, he was enabled to apply the artery forceps and perform the ligation with facility. This procedure might, perhaps, be regarded as quite bold, but the results showed that it had accomplished a great saving of life, when the former statistics were brought into comparison. In connection with this point, Dr. Dennis presented some specimens, showing that a meningeal hæmorrhage might be produced by *contre-coup*.

(2) *Fat Embolism.* Having mentioned that the attention of the profession was first called to this condition by Wagner and Zenker, he gave a *résumé* of the researches of various authors concerning it. While fat embolism was usually fatal in connection with fatty liver or tuberculosis, it was usually by no means so serious a complication when met with in compound fractures. He briefly described the symptoms, which, in general, resembled those of secondary shock, and a prominent feature of which was the frequent occurrence of Cheyne-Stokes respiration. In several cases he had found an abundance of fat globules in the urine. Fat embolism was said to be more frequent in the aged than in younger subjects. Having pointed out the differential diagnosis between this condition — secondary shock and pulmonary embolism — and stated that one of the principal points in this was the matter of time (fat embolism always occurring within three days), he spoke of the treatment. This consisted in the administration of ether, on theoretical grounds, for the purpose of dissolving the fat, and of appropriate stimulants. Dr. Dennis said that he had now under treatment in Bellevue Hospital a case of fat embolism, which had occurred in connection with a simple fracture of the fibula. Two days after the accident, the patient was suddenly seized with great dyspnœa and depression, and the temperature ran up to 104°, while the urine was found loaded with fat globules. Under the administration of Hoffman's anodyne and carbonate of ammonia, the patient became relieved, and her condition was now favorable.

(3) *Insanity following fracture.* While insanity was sometimes undoubtedly due to traumatism, it was usually a difficult thing to trace it to a fracture of the skull. He had, however, seen some such cases. In one of these, the patient, he was informed, was now hopelessly insane. In another, idiocy and imbecility resulted. In one in which constant severe headache, accompanied by more or less mental aberration, followed such a fracture, he trephined the skull, and the patient was cured. In three cases of traumatic epilepsy, in which there was more or less disturbance of the mind, he also effected a cure by trephining. He expressed the positive conviction, however, that in epilepsy there is little to be expected from trephining except in cases where there was well-marked depression. Having referred to a number of successful cases from trephining performed by other surgeons, he spoke of the importance of always raising a depression of the skull as soon as possible after the reception of the injury, whether there are any symptoms due to the depression present or not. By such a procedure the patient might be saved from becoming insane in the future.

(4) *Malignant disease.* Dr. Goss had pointed out that about one-half of all the cases of malignant bone-disease could be traced to traumatism, and Dr. Dennis said that he had been able, in quite an extended experience, to verify the correctness of this view; although it was not often easy to trace such disease to fractures. Sarcoma was the variety of malignant growth that usually resulted from traumatism. Epithelioma might also develope indirectly; but this almost always arose in connection with a sinus leading down to the bone. When malignant disease occurred, he advised early

amputation, and in illustration he referred to a case of sarcoma of the femur which was sent to him by Dr. Robb. The patient refused to submit to amputation until the growth had become very extensive, and he did not survive the operation. The specimen was exhibited and showed an enormous growth of the malignant disease.

(5) *Tenotomy.* Two years ago he said he had called attention to the value of tenotomy, in many instances of compound fracture, and since then he had met with a considerable number of cases which had further confirmed him in this opinion. While it was of great utility in all oblique cases in which there was difficulty in reduction, it was of no avail in vertical fractures. He had practised it not only on the tendo achillis, but also on the hamstrings and the tendons of the arm and forearm.

(6) *Healing by Schede's method.* Fluid blood and blood clots, he said, if perfectly aseptic, were undoubtedly valuable aids to hastening and perfecting repair by primary union; but if rigid antisepsis was not carried out, they might be a source of very great danger. This was no doubt the reason why this method had not been adopted earlier; as it was only since the days of antiseptics that it had become practicable.

(7) *Amputation.* Formerly, amputation was resorted to in a great majority of all compound fractures admitted to large hospitals, as this was necessary in order to prevent blood-poisoning. In Bellevue it was resorted to in every serious case; and a fracture into the ankle or knee-joint was regarded as affording a certain indication for amputation. But now the case was entirely different; and the loss of a few inches of the shaft of a bone, (although there might be some permanent shortening), did not justify amputation. The limits for this were now exceedingly narrow and contracted; and this fact he considered one of the greatest advances in modern surgery. When amputation was found to be necessary, it was proper to defer the operation for several days in cases where great shock was present; while formerly this would not have been possible without subjecting the patient to the greatest possible risk. It was important, however, in such cases, that no dressing should be applied or compression made above the seat of injury, on account of the danger of inducing dry gangrene.

Dr. Dennis next proceeded to present an analysis of his cases, which were 516 in number. Of these, 107 were fractures of the skull, and of the latter 47 proved fatal. 39 of the patients died, however, within the first 48 hours. The special circumstances attending the death of the remaining 8 were referred to singly. There were 15 cases of fracture of the arm; of which 14 recovered, and 1 died. The latter was a severe case of railway injury, and death ensued within 48 hours. 23 were cases of fracture of the fore-arm, of which 22 recovered, and 1 died. This death occurred within 24 hours. 53 cases of fracture of the thigh; of which 48 recovered, and 5 died. All the deaths occurred within 48 hours. 150 were cases of fracture of the leg. Of these, 15 cases required amputation. This left 135 cases; of which 122 recovered. Of the remaining 10, 2 were transferred from the hospital at the request of the patients, immediately after their reception, and the 8 others died; all of them within 48 hours. 37 were fractures of the hands and feet, and these were all accompanied by much damage to the soft parts. One case died from other injuries, and the rest all recovered. 23 were fractures of the shoulder, elbow and wrist, and all recovered. Of fractures of the hip, knee and ankle, there were 40 cases; 4 of which required amputation, and 3 of which proved fatal. In none of the latter was septicæmia the cause of death. 24 were fractures of the carpal, metacarpal, tarsal, and metatarsal bones, and all recovered. 28 were fractures of the upper and lower jaws, and these also all recovered. 13 were fractures of the ribs and nasal bones, and 1 of them died, within 36 hours. In addition, there was 1 case of fracture of the ilium, and 2 of the malar bones; all 3 of which recovered.

In the 516 cases, there were thus: 59 deaths, 19 cases requiring amputations, and 2 cases in which, owing to removal from the hospital, the result was unknown. Of the 59 fatal cases, 49 died within the first forty-eight hours, or during the period of shock, and, therefore, before any plan of treatment could be adopted. Of the remaining 10, one died of tubercular meningitis (the autopsy showed that there was no septic trouble); one died of uræmic poisoning from Bright's disease; and of the others only two could be attributed to septic infection of the wound. One of these patients, who had compound fracture of the skull, died fifty-three hours after trephining, and the other was a man over sixty years of age, whose foot was very badly crushed.

Dr. Dennis then quoted some of the statistics of compound fractures, gathered from the best authorities, before the introduction of antiseptics. According to Norris, at the Pennsylvania Hospital from 1839 to 1851, there were treated 116 cases of compound fractures of the leg and thigh (excluding those in which amputation was resorted to), with 51 deaths, or a mortality of 44 per cent. In the New York Hospital, about the same period, there were 126 cases, with 61 deaths, or a mortality of 48 per cent. In the German hospitals, a decade later, the mortality was 31 per cent., while in St. Petersburg it was no less than 68 per cent. In Guy's Hospital, London, from 1841 to 1861, the mortality was 26 per cent. According to the most reliable tables, therefore, the number of deaths was from 26 to 68 per cent.

After the introduction of antiseptics there was a wonderful difference. The death-rate fell from 68 to 4 per cent. In Bellevue Hospital, among 224 cases of compound fractures of the extremities (exclusive of amputations) such as the other statistics were based upon, there were but 11 deaths, or a little over 4 per cent. Now, taking Dr. Dennis's cases, there was not a single instance among the fractures of the extremities of death, from septipyæmia. Pyæmia and septicæmia could, therefore, be said to have been eliminated as a cause of death in these cases. This great result was due to the science of bacteriology, and for such a triumph the profession was indebted to Sir Joseph Lister, whose name could never be dissociated from the march and progress of surgery.

Dr. F. Van Fleet exhibited the specimens from, and made some remarks upon a case of

ABSCESS OF THE BRAIN FROM SUPPURATIVE OTITIS.

The chief point of interest was that if the ear-trouble had been properly attended to in the beginning, the abscess, which was located in the left hemisphere of the cerebellum, would probably not have developed, and the child's life thus been needlessly sacrificed.

AMERICAN ACADEMY OF MEDICINE.

ANNUAL MEETING AT PITTSBURGH, OCTOBER 12TH AND 13TH, 1886.

THE annual meeting of the American Academy of Medicine was held in Pittsburgh, Penn., on Tuesday and Wednesday, the 12th and 13th of October, three sessions being held on the first and one on the second day.

This Association has for its principal objects the elevation of the standard of medical education, and the persuading of young men who propose studying medicine to prepare themselves by a full collegiate course. The membership is substantially limited to those doctors of medicine who have earned a degree in arts or science. Last year a number of amendments to the constitution were offered, all looking to an enlargement of the membership by accepting those who are not A.B.'s, but have distinguished themselves in the profession, and much of the interest of this year's meeting centred about these propositions, which, under the usual rule, had been lying over for a twelve-month. The action of the Society, however, showed that there is at present no considerable desire to alter the conditions of fellowship, for all the proposed amendments were laid on the table till next year, when they will be again discussed. There is no disposition in the Academy to attempt to establish in the profession an aristocracy based upon the circumstance of early advantages, but it is thought wise to enlist the sympathies of a much larger number of college-bred men before endeavoring to make the membership general.

Most of the papers presented were on topics within the special scope of the Academy's work, but several strictly scientific articles were read.

DR. RICHARD J. DUNGLISON, of Philadelphia, made a report on the present working of laws regulating medical practice. The various States furnished their contributions to the material of this paper, which showed clearly the formal attitude of the people in different parts of the country towards the profession. The influence of legislation in one State upon the physicians of neighboring States was strikingly portrayed, as, for instance, where the stringent law of Illinois results in the flooding of surrounding commonwealths with the charlatans which flee from the wrath of Rauch. The report was so full of details as to forbid anything like a brief abstract, and must be read in full to be appreciated.

DR. FREDERIC H. GERRISH, of Portland, read a paper on the best equipment for medical study. The Academy advises a collegiate course, but the curriculum varies so widely in different institutions that it is desirable that the studies best adapted to the preparation for medical study should be pointed out in order that a selection may be made, as is possible in so many of the colleges of to-day. The essayist advocated the study of English, Latin, French and German, mathematics, physics, chemistry, botany, zoölogy and logic. He insisted that these branches should be pursued in a thoroughly practical way; for example, the student should learn to speak the modern languages, and should study the physical sciences in the laboratory, and not merely from the text-book. The analysis of chemical substances and of botanical specimens was considered a peculiarly good training of the mind in the direction of diagnosis by exclusion, the only safe method of determining the character of a disease.

DR. R. LOWRY SIBBET, of Carlisle, Pa., read a paper on the two standards, literary and medical, advocating the necessity of a degree in arts and a degree in medicine, as the only presumptive evidence of entire qualification for medical practice.

DR. L. P. BUSH, of Wilmington, Del., made a strong argument on the advantages of a classical education to the medical student and the physician. The discipline resulting from such training was claimed to prepare the mind particularly well for the pursuit of medical study. The thought was developed in a graceful and attractive style, which won the admiration of all.

DR. PHINEAS S. CONNER, of Cincinnati, presented an essay on the medical service of the United States Pension Bureau. While admission to the medical department of the army and navy is possible only after an examination far more severe than that which is required in any medical college in the country, and the Marine Hospital Service exercises similar care in the selection of its surgeons, the medical work of the Pension Bureau is committed to hundreds of physicians all over the country, whose appointments are strictly political, and whose professional qualifications are made the subject of no particular investigation. And yet these men have to deal with many times more cases of disease and injury than do the surgeons of army, navy, and marine hospitals together, and these cases are of a character to demand the most profound learning, the widest experience and the greatest acumen. Dr. Conner proposed the establishment of a medical corps of highly educated men, limited in number, which should devote itself entirely to pension work.

DR. VIRGIL P. GIBNEY, of New York, read a paper on the management of tubercular spondylitis, and Dr. J. Cheston Morris, of Philadelphia, reported an extraordinary case of prolonged gestation. Other papers by gentlemen who were not present were read by the secretary.

DR. R. S. SUTTON, the president of the Academy, in his address, deplored the existence of the great quantity of medical schools, and the low standard which they maintain. The character of the profession is continually lowered by the introduction of hordes of half-educated men. He advocated the requirement of a knowledge of the classics, as enlarging the vocabulary, training the memory and reason, cultivating the habit of close observation. The modern languages are essential to an advanced physician, and mathematics and mental and moral philosophy are elements in his outfit. The benefits of the physical sciences are obvious. The insufficiency of the usual professional equipment was pointed out, and greater strictness demanded of the medical schools. He believed that legislation only could remedy these evils. The teaching and licensing bodies should be separated, and the authority of the latter be derived from the State.

The following officers were elected for the ensuing year: Dr. L. P. Bush, Wilmington, Del., president; Drs. R. L. Sibbet, Carlisle, Pa., S. J. Jones, Chicago, P. S. Conner, Cincinnati, and V. P. Gibney, New York, vice-presidents; Dr. R. J. Dunglison, Philadelphia, secretary and treasurer. The next annual meeting will be held in September, 1887, in the city of Washington.

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AUTO-INTOXICATIONS.

IN a previous issue of the JOURNAL, we have referred to the experiments of Panum, Gautier, and others showing the development under certain conditions of alkaloids known as ptomaines and leucomaines, from decomposing animal structures and from certain fluids in the living animal, which alkaloids have a most intensely poisonous action when introduced into the animal economy. The practical bearing of these facts is obvious.

A further contribution to this subject, dealing more particularly with the clinical side of it, was made at the last International Medical Congress at Copenhagen, the official report of which has just been received. Professor R. Lépine, of Lyons, read the paper, in which he discussed two sources of possible auto-intoxication, the one by absorption from the digestive canal, the other from the secretions, particularly renal, in acute diseases. This two-fold source of infection had already been pointed out by Professor Bouchard. Among the cases cited by M. Lépine of probable absorption from the intestinal canal, is one in which a patient, operated upon by Professor Mollière for strangulated hernia, and having an artificial anus in the right inguinal region, developed after five months a sudden delirium with general scarlatiniform eruption, dilated pupils and rapid pulse. The interne diagnosticated the case as scarlatina but this diagnosis was rejected, as there was no elevation of internal temperature and no angina. Atropia poisoning was suspected, but careful inquiry excluded that possibility. It was finally considered to be a case of septic absorption from the intestine. It is worthy of note that atropia rather than muscarine (as in the observation of Gautier), was the drug whose action the intestinal poison simulated. This somewhat bold diagnosis was confirmed by M. Mollière at the autopsy, when the segment of the intestine below the artificial anus, namely, the ascending colon, was found to contain a quantity of stagnated matter, apparently originally a mucous secretion, which had become intensely fetid. Other similar cases are given where the intestinal contents had been long retained, giving rise to attacks of high pulse, with normal temperature, profuse sweating, polymorphic cutaneous eruption, etc. One of the patients, a physician, had complained previous to his septic attack of a fæcal taste in his mouth.

In the case of acute diseases, the evidence presented by M. Pinard is necessarily largely physiological. The ethereal extracts made from the urine of typhoid and pneumonia patients, containing only a small part of the alkaloid which more complicated chemical processes would have removed, were deprived of all those normal constituents that might have an effect in obscuring the action of the alkaloids. Special precautions were also taken against the introduction in connection with the chemical processes employed of any substance which could produce toxic effects. The total urine of twenty-four hours from a pneumonic patient yielded even to the crude process of agitation with ether, enough of an alkaloid to kill five frogs. In a case of pneumonia the urine taken just before the crisis of the disease gave toxic alkaloids which could not be obtained two days later, after the defervescence had been established. The frogs which were killed by the injection of the alkaloid from a pneumonic patient, had acceleration of the heart action and that organ was found post-mortem in systole; while the frogs inoculated from typhoidal urine had slowing of the heart, which finally stopped in diastole. This might be taken in confirmation of the clinical observation that in pneumonia the pulse is more rapid proportionally to the temperature than in typhoid; but unfortunately there seems to be some doubt as to whether the dose of the alkaloid administered from the two kinds of urine was the same.

The conclusions reached provisionally by M. Lépine are:

(1) That the extract from two hundred cc. of febrile urine, deprived almost wholly of salts, are capable, if injected into a small mammal, of causing death in a few hours, which effect will not be produced by the extract from the same quantity of normal urine.

(2) There is no correlation between the toxic power of the extract (deprived of salts) from a given quantity of urine and the proportion of urea which that urine contains. In other words, the toxic organic matters are not proportionate to the urea. Anæmic patients, having a diminution in the excretion of urea, were found to have urine that was particularly toxic.

(3) There is a certain correlation between the toxic power of the alkaloids contained in the urine and that of the urinary extract deprived of salts. Thus, in the pneumonia patient, the urine, before defervescence, contained a toxic alkaloid and also gave a very poisonous extract, while, two days later, the crisis having passed, there was no alkaloid discoverable, and the extract was much less poisonous. Yet the density of the two urines was the same.

(4) There is sometimes a correlation between the gravity of the disease and the toxic power of the urinary extract, but this correlation is by no means constant.

(5) Finally, it seems clear to the author that certain urines contain poisonous organic principles which may be supposed to have an influence upon the morbid phenomena of the diseases which they accompany; this view is confirmed by the facts observed as to auto-infection from the intestinal canal.

In the discussion which followed this paper, Dr. Stadelmann, of Königsburg, spoke of the evidence of auto-infection in certain forms of diabetes mellitus, leading to diabetic coma, which, in its complex of symptoms, corresponded closely with the complex of symptoms induced in the herbivora by poisoning with acid injections. The formation of acid and its elimination through the urine was found by Stadelmann to be much greater than normal during diabetic coma, and he ascribed the symptoms to the seizure of the acid upon the fixed alkalies of the blood. Hence follows, according to him, the indication for treatment in diabetic coma, namely, the intravenous injection of alkalies (carbonate of soda).

Professor Edelson, of Kiel, spoke of the evidence of auto-infection from the intestinal canal, and referred to the experiments of Panum in which the injection into animals of toxic alkaloids from the bowels had induced the symptoms of excessive drowsiness, which symptoms he had himself noticed clinically in cases of obstipation. He therefore believed that one of these alkaloids had poisonous properties resembling those of morphine.

HYPNOTISM AS A PHASE OF THE MIND-CURE.

IT cannot be as yet claimed that hypnotism has won for itself a definite and well-recognized place in the domain of therapeutics, or that it is always possible to separate the fraudulent from the genuine in the performances of the professional adept. The phenomena of so-called "mesmerism" and "animal magnetism" have too long been the *jeu d' esprit* of the unscrupulous charlatan, and there is connected therewith too great an accretion of the apocryphal, to seriously attract the attention of many physicians who are mainly solicitous for positive methods in theory and practice. In fact, the reality of the phenomena has been repeatedly called in question by critics who, however, may have pronounced judgment from too limited a stand-point of observation.

However this may be, it is certain that among some continental physicians hypnotism is attracting increased attention as a remedial agent, and not only the reality of the phenomena, but the marked benefit sometimes derivable from the new system of *psychotherapy* (so-called by its advocates) have been recognized by such different men as Chemnitz and Weinhold, Ruhlmann and Opitz, Heidenhain, Grutzner, Berger, Preyer, Fischer and Wiebe, and Czermak, of Germany; Lombroso and Giovanni in Italy; Charcot, Auguste Voisin, Charles Richet, Liebeault, Bernheim, the late Professor Lasègue, Pitres, Beaunis, Bottey, Prospère Despine and others, in France.

The literature of hypnotism is now quite extensive; besides numerous review and magazine articles, several quite portly volumes have appeared within the last five years, the most important of which is the work of Professor Bernheim, of Nancy, entitled: "De la Suggestion et de ses Applications à la Thérapeutique," and published the present year by O. Doin.

As for the meaning and scope of hypnotism, the scientific men who now stand as its representatives do not claim that there is anything in the phenomena which they have observed, which is contrary to the physiological and psychological conceptions which science has established in our time. Bernheim, who scouts the pretensions of those who would make of hypnotism a prop of spiritism, declares that "of marvels such as 'second sight,' prevision of the future, 'mind reading,' vision at a distance or through opaque objects, transposition of the senses, clairvoyant insight into physical states and remedial indications, I have seen nothing and know nothing." Equally do they scout the idea that "the phenomena determined in the hypnotic state are due to a magnetic fluid, or some sort of emanation going from one organism to another." This was the old view, which was effectually exploded by Braid in 1841, who taught that the hypnotic condition and the phenomena associated therewith, are purely of a subjective order, being dependent on the nervous states of the subject himself. What most strikes an ordinary observer is the automatism of the hypnotized subject who is for the time (to use Dr. Carpenter's simile) a mere puppet, moved by leading strings in the hands of the operator. It is by *suggestion* that the latter manipulates his subject, and this is now the favorite word to designate the phenomena in question. The hypnotized individual illustrates then only the ordinary laws of the nervous system; with the cerebral voluntary activity and consciousness dormant, he is much in the condition of the decapitated frog, says Prospère Despine.

As for the number of persons in any community amenable to the hypnotic influence, the proportion, according to the statistics of Liebeault, is about fifteen per cent. Bernheim finds the proportion much larger. "I have been able by my researches to assure myself," he says, "that refractory subjects constitute the great minority." It is interesting in this connection to note that Bernheim finds the best subjects to be those who have all their life long been accustomed to implicit obedience to their superiors, such as soldiers, day laborers, and nuns. Yung adds that hysterical persons are most susceptible to the "magnetic influence."

Hypnotism is a state in which the subject is completely under the control of the person who has induced the somnambulism. It might be inferred then that this power might be abused for criminal pur-

poses by unscrupulous experts. Bernheim, however, who has devoted a chapter to this subject, has been able to find only one or two well attested cases of the kind. On the other hand, we occasionally read pleasing reports in foreign journals of this singular power being turned to praiseworthy ethical account, the hypnotizer "suggesting" to his patient who it may be, is lewd, ideas of chastity, to the untruthful, ideas of truth, to the selfish, ideas of altruism, etc.[1]

But it is as a remedial agent for the cure of physical disease that hypnotism as such, need be especially deserving of the attention of physicians, and if the new psychotherapy be what it is claimed to be by certain continental authorities, it might prove an acquisition to the resources of the practitioner. The professional hypnotizer claims largely to control the sensorial states of his patient as well as the cerebral springs of motion, and he tells the man suffering from lumbago, pleurodynia, migraine, etc.: "Your pain is all gone." If we may trust our authorities, above quoted, that assurance often proves to be the actual truth, the dynamic states which caused the painful sensation disappearing under the powerful stimulus imparted by the medical hypnotizer. Is the patient suffering from paralysis of a certain kind? the suggestion that he can move his arm or his leg will often arouse to activity the dormant nervous motor mechanism.

The following, among other cases reported by Bernheim, were benefited in a marked manner by hypnotism:

(1) Post hemiplegic bilateral trembling, with hemianæsthesia and contractures of the left extremities, due to central softening; these symptoms, which were proved by the autopsy to be dynamic, that is, the effect of a reflex cerebral irritation, and not of descending degeneration, were alleviated and kept in abeyance by hypnotic "suggestion."

(2) Hysterical hemianæsthesia; complete return of sensibility after one hypnotic séance.

(3) Hysteriform crisis with hysterical somnambulism. Rapid cure from hypnotism.

(4) Hysteria. Incomplete paraplegia, with anæsthesia of the legs. Restoration of the sensibility in one séance, of the motility in six séances.

(5) Hysterical aphonia, of two months' duration, cure by hypnotic suggestion.

(6) Nervous aphonia, lasting a month: cured by "simple affirmation."

(7) Gastric troubles of a nervous character. Anæsthesia of the limbs. Rapid disappearance of the anæsthesia by "suggestion." Temporary amelioration of the gastric troubles.

(8) Symptoms of multilocular sclerosis; notable amelioration and arrest for six months of the affection by hypnotism.

(9) Diffuse rheumatic myelitis. Marked amelioration by repeated "suggestion."

(10) Rheumatic and nervous "girdling" pains, and pains in the lower extremities for twenty months, making it impossible for the patient to walk. Cure by hypnotic "suggestion."

(11) Neuropathic insomnia, want of appetite, trembling, melancholy; cure by "suggestion."

(12) Partial chorea (confined to one arm); cure by hypnotism.

(13) Choreic movements of the hands, difficulty in writing; cured by "suggestion."

(14) Writers' cramp; cured by hypnotism.

(15) Nocturnal incontinence of urine; cured by hypnotism.

(16) Hysterical paraplegia; cured by hypnotism.

(17) Epigastralgia; cured by one séance.

(18) Intercostal neuralgia; cured by "suggestion."

(19) Rheumatic paralysis of the forearm and hand. Restoration under hypnotism.

(20) Old rheumatic arthritis of shoulder. Marked amelioration under hypnotism.

(21) Muscular rheumatism with cramps; cured by hypnotism.

(22) Rheumatic ileo-lumbar neuralgia; cured by hypnotism.

(23) Arthralgia consecutive to arthritis; cured by hypnotism.

(24) Pleurodynia; cured by "suggestion."

(25) Chronic articular rheumatism (of ankles); cured by hypnotism.

In summing up and classifying the different cases, Bernheim finds that of those treated by hypnotism and deriving benefit from it, 7 were suffering from organic affections of the nervous system, 9 were cases of pure hysteria, 12 were neuropathic, 11 were neuroses, (chorea, hemichorea, writers' cramp, etc.), 3 were cases of "paresis and dynamic paralysis," 4 were gastro-intestinal affections, 11 were classified as "divers pains," and 14 were rheumatic affections.

As to the question whether hypnotism is dangerous to those on whom it is practised, Bernheim replies, *no, if properly managed.* It disturbs none of the functions of organic life, and its effects on the cerebral innervation (especially in disordered states) are calmative. As a remedy against insomnia, it is almost unrivalled. It is worthy of note that Yung[2] and Barthe[3] take a different view, regarding hypnotism, whether induced by a second person, or *self-induced* (trance-mediumship, clairvoyance), as more or less hurtful to the nervous system of the subjects, enfeebling the control of the will, and fostering a credulous, spiritless and superstitious habit of mind. Hypnotism exalts the automatic at the expense of the rational and voluntary powers.

With regard to the alleged triumphs of "suggestion" in the department of healing, it should be mentioned that similar results have been placed on record by Charles Richet, Liebeault, Paul Richer and others in Paris, by Creutzfeld, Berger and Fischer, in Germany, and he would be a hardy man who would hastily gainsay such an accumulating mass of testimony.

Not the least interesting portion of M. Bernheim's book to which we have referred, is the chapter in which he correlates hypnotic therapeutics with mind or faith cure, and the miracles of healing performed in all ages, and attempts to show that all come under the same general law, and are susceptible of a similar explanation. As Braid overthrew the transcendental pretensions of the mesmerizers by substituting for their occult forces, forces that could be brought under scientific cognizance and control, so the progress of physiological inquiry has made plain the essential unity of the phenomena of *induced* and those of *natural* somnambulism, while certain morbid states, as hysterical catalepsy and coma, find their counterpart in occasional conditions of the hypnotized subject. It is, moreover, no longer doubtful that if the "faith healer," or modern "Christian scientist" has now and then, in some deluded but devoted subject,

[1] See the report of Henrot and Voisin at the recent meeting of the French Association for the Advancement of Sciences. Voisin's patient was a female, "debauched, coarse and lazy." During the mesmeric sleep (which he kept up for ten or twelve hours a day), he improved the opportunity to suggest to the patient ideas of obedience, of submission, of decency, and he exhorted her to useful labor. "A complete transformation was effected in several months!"

[2] Du Sommeil Normal, et du Sommeil Pathologique, Paris, 1884.

[3] Le Sommeil Non-Naturel, Paris, 1886.

awakened dormant powers into activity, it is by a mechanism precisely like that which our French psycho-therapists call "suggestion in the waking state."

DEATH BY A DRUGGIST'S ERROR.

THE fatal mistake of a Haverhill druggist, whereby eighty-eight grains of podophyllin were put up for one dose for a young woman, the sign *ss*, representing half a grain, being mistaken for eighty-eight, the mistake resulting in the death of the young woman, illustrates the folly of allowing young clerks with no preliminary study or preparation to undertake the responsibility of dispensing drugs.

Were the law whereby apothecaries are authorized to dispense medicines as stringent as it ought to be, or were there, in fact, any State Statute whereby a man with no fitness for the place is forbidden to sell powerful drugs (and in all foreign countries such protection is given the public, ignorant and incompetent men being excluded from the druggist's office), such mistakes would seldom or never occur. A very superficial knowledge of materia medica would have indicated to the dispensing apothecary that eighty-eight grains of podophyllin was a dose that it would be impossible for a physician to prescribe.

MEDICAL NOTES.

— The following application for a pension is copied from the records of a United States pension bureau in a Western city. Readers will kindly excuse its early English for the sake of its anatomical curiosities, and the light it throws upon the temptations to which examiners for pensions are subjected.

I do her by swar before god that i was shot betwixt my leggs and mi rite legg an in my hed; it went in to me rite in the middle an ripped me all to thunder, it cut of one of my strings and dropped one of my kasters in the bottom of the sak an there hit as been ever since, and mi wife says it is a dam shame, case it is sorter nocked me up on the family biz. but hant a mindin that air much; hits the bustin the damed ball done me behind, as i hats (hates) for it kom out rite in the cheek of mi as an left a big skar an it hurts when I set down that is what i want a pension for it is; I hant no dimikrat, nor i want shot in the as like some of these pizen dimikrats bout these parts say i was; i gott that facing the rebs i did an i was treated by a temprey hospital surgen named tod in a temprey hospital on the bank of tenese river in temprey camp; camp by the border of chatanoga tense; now ginthemens i want a pension, and if you dont give me one i'l be g–d d–m if i vote for any of your crowd agin;

fraterally yours til deth, B.

BOSTON.

— Dr. J. S. F. Bush met with a serious accident last week. He was thrown from his carriage, his horse running away, and one knee-joint was laid open, the patella being almost torn off.

— Dr. James R. Chadwick, who was delegated to represent Harvard University at the recent festivities at Heidelberg, tells a story of the "republican austerity" which he was supposed to illustrate. For while other delegates presented their credentials emblazoned upon parchment, and enclosed in cases of velvet and gilt, all that he had to offer was an informal note, written on a half-sheet of paper by President Eliot, and bearing date at his summer residence at Mt. Desert. — *Harper's Weekly.*

Dr. Chadwick's credentials, we believe, were mailed at Mount Desert, but bore date at Cambridge.

NEW YORK.

— The tenth annual commencement of the Training School for Nurses of the Charity and Maternity Hospitals, on Blackwell's Island, took place on the 26th of October, in the chapel of Charity Hospital. Dr. Henry Goldthwaite presented diplomas to a graduating class of twenty-four, and Commissioner Brennan gave each member of the class a nurse's pocket-case.

— A somewhat sudden and serious outbreak of small-pox, the origin of which has not yet been traced by the authorities, has occurred in Brooklyn, and Health Commissioner Otterson has appointed six sanitary inspectors on special vaccination service. An extra force of men has also been assigned to duty on the fumigating corps.

— Measles has become quite prevalent in New York. During the week ending October 30, there were reported 162 cases. During that ending October 9, the number was 55; October 16, 95; and October 23, 108. 420 cases have been reported during the past four weeks, but the mortality has been low, only 37 deaths having occurred from the disease. Most of the cases have been in charitable institutions.

Miscellany.

GREAT WITS AND MADNESS.

THE JOURNAL has already, in a previous volume, referred to the marked strain of madness in the family of Victor Hugo, who had, on the maternal side, a mad uncle and mad cousins, whose brother Eugene died in a mad-house, and whose only surviving daughter, Adele, has been for years in confinement. A Paris letter says: "A controversy is now going on in the scientific world on the conditions under which genius is produced. Senator Naquet, and Drs. Marechal, Jacopy, and Bull say that it is a neurosis, and that most great men have had mad or epileptic ancestors or descendants, or been themselves attacked with epilepsy, or been, in some respects, on the very brink of lunacy. Cæsar and Peter the Great had falling sickness. Napoleon was subject to long fits of fainting that resembled catalepsy. Newton had also a disordered nervous system. Byron's mother was a raging, irresponsible termagant, and father no better. Isabella the Catholic, who was certainly a woman of genius, had a mad uncle, a mad brother, and mad daughter, the ancestor of all the Spanish and Austrian Hapsburgs. Her (Isabella's) grandson, Charles V, also a man of prodigious politi-

cal genius, was epileptic, and the progenitor of a line which ended in idiocy. Pascal had fits and hallucinations. Luther also had the latter, and thought he saw the devil in person coming to tempt him. William the Conqueror was the son of Robert the Devil, who must have had, to judge from the legend which has been handed down, a nervous system that ran riot. According to the new theory, genius, like the orchard pear or apple tree, or the double rose, or dahlia, is abnormal, and except in an intellectual sense, sterile. Thus Dante (a hypochondriac), Michael Angelo, Raphael, Shakespeare, Cowper, Wordsworth, Byron, Scott, and De Quincy either left no posterity, or families that soon died out. That of Victor Hugo is not apparently destined to live long."

SIR SPENCER WELLS ON THE OCCUPATIONS OF WOMEN AND OVER-PRESSURE.

In his inaugural address before the Sanitary Congress, recently held at York, England, Sir Spencer Wells spoke on the above subject as follows, according to the report in the *Lancet*. "So far as concerns the mental and physical training of children, and giving women the option of other occupations than those of domestic life, I see no great cause for alarm. It is an age in which education — at any rate for the middle classes — must be pushed far beyond the limits which our fathers thought wide enough for us. Mere rule-of-thumb work is almost out of date, and there are so many industries in which scientific knowledge and exactness are requisite, that the want of early education cuts off a young man's chances of advancement. To engage in most of the recent applications of steam power, electricity, magnetism, and chemistry — to be available in carrying out the complexities of engineering science — a workman must be something more than a mere machine. He must have head as well as hands — brain as well as muscle; and as uneducated brains are not worth more in the labor market than untrained muscle, we must be content to make some sacrifice in the culture. While we pity the few who fall in the struggle, we must remember that there is no chance for those who stand still. As for the outcry about the dangers from women taking up men's work, it is breath wasted. A great many failures will outweigh a few successes and bring the balance right. For my own part, I think women capable of a great deal more than they have been accustomed to do in times past. "To suckle fools and chronicle small beer" surely cannot be the chief end of woman. If overwork sometimes leads to disease, it is more morally wholesome to work into it than to lounge into it. And if some medical practitioners have occasionally observed cases where mental overstrain has led to disease of mind or body, I cannot deny that I also have at long intervals seen some such cases. But for every such example I feel quite sure that I have seen at least twenty where evils equally to be deplored are caused in young women by want of mental occupation, by deficient exercise, too luxurious living, and too much amusement or excitement. Again, we have heard much of late about over-pressure from work in schools. This is one of the novelties of our time. No doubt it exists, and I think it may in part be traced to some of our sanitary success. We have reduced the mortality of early infancy. Many children who would formerly have died off-hand are now saved, and find their way into the schools. They are the survivals of the least fitted. They live, but they are not strong — not so strong as the average. They have to submit to the same routine, and to be forced up, if possible, to the same standard as the rest. But the effort is too much for them. Their frames are not hardy enough to resist the mental strain. They show all sorts of nerve symptoms, disappoint the teachers, and are the types brought forward as victims of the system. The vice of the system is that it is indiscriminate. There is no revision of the recruits, and the tasks are not apportioned to the feeble powers of sanitary survivors. This is an evil which will remedy itself in time by the growing up of a larger proportion of strong children, and the present difficulty may be got over by a little patience and moderation — a little more regard to sanitary logic. The children must have training before education, and must be put upon something even less than a half-time system."

RESOLUTIONS IN MEMORY OF ALLEY TALBOT WAKEFIELD, M.D.

At a meeting of the Cambridge Medical Improvement Society held October 25th, 1886, the following resolutions were passed:

Whereas, In the death of Dr. Alley Talbot Wakefield, on the 18th inst., this society has lost a much esteemed member, we wish to express our sense of loss, our appreciation of his character and ability, and our sympathy with his family and immediate friends.

During his brief association with us we recognize a character pure, noble, and of strict integrity. We found him devoted to his work, prompt and efficient in emergencies because of his thorough knowledge and perfect self-control.

To exceptionally good natural endowments he had added unusual advantages in study and hospital practice, and the success he had already achieved gave assurance of a bright professional career in the future.

Frederic W. Taylor, M.D., *Secretary*.

Correspondence.

THE GIFT OF MRS. WOERISHOFFER TO THE NEW YORK ACADEMY OF MEDICINE.

The following correspondence will explain itself:

New York, October 15th, 1886.

Dr. Everett Herrick, *Chairman Board of Trustees, New York Academy of Medicine*.

Sir,— In presenting a munificent donation to the New York Academy of Medicine, Mrs. Anna Woerishoffer was guided, first, by the great respect her late husband, Mr. Charles F. Woerishoffer always felt and expressed for medical science, and the medical profession, and second, by her conviction that it is better to aid and sustain such institutions of either science or charity as have already proved their faculty and right to exist by duration, results, and accumulated property, than to create new institutions.

After mature deliberation she came to the conclusion that the New York Academy of Medicine has, by its publications in the journals of the country, and in numerous volumes of transactions and bulletins, and by its regular stated and section meetings, contributed largely to the progress of medical science, and deserves eminently the name of a scientific body.

That after having existed forty years, collected an ever-increasing library, and accumulated considerable property, the New York Academy of Medicine holds out the promise of *perpetuity*.

That, by excluding politics and ethical strifes from its constitution and gatherings, it deserves the name of a

purely and exclusively scientific body, and thereby the confidence of the public; as it must necessarily become and be the centre of the scientific interests and labors of the medical profession of New York.

Mrs. Woerishoffer was also struck with the fact that the present building of the New York Academy is too small for its present and future purposes, that not only do its sections require more accommodations, but that every medical and scientific society of the city ought to find ample room within its walls and look upon the Academy as its proper centre; and finally, that the increasing library is in urgent need of a fire-proof building.

From these points of view, Mrs. Woerishoffer desires to contribute to the means required for enabling the New York Academy of Medicine to accomplish its great ends and reach its high aims, which she takes to be both truly scientific and truly humane.

I have the honor, Mr. Chairman, of enclosing Mrs. Woerishoffer's letter and her check for twenty-five thousand dollars. Very respectfully yours,

A. JACOBI, M.D., *President.*

NEW YORK, October 13, 1886.

DR. A. JACOBI:

Dear Sir,— Please find enclosed a check for the "Academy of Medicine," which I send you in memory of my husband, the late C. F. Woerishoffer. In selecting the Academy of Medicine as one of the institutions to which I intend to distribute a certain sum in accordance with the wishes of my husband, I am led by the high appreciation Mr. Woerishoffer always entertained for the medical profession. Yours very sincerely,

ANNA WOERISHOFFER.

NEW YORK, October 22, 1886.

MRS. ANNA WOERISHOFFER, New York.

Dear Madam:—At a meeting of the Academy held Thursday evening, October 21st, 1886, the following resolutions, moved by Fordyce Barker, M.D., and seconded by C. R. Agnew, M.D., were unanimously adopted.

Resolved, That the New York Academy of Medicine accept with the warmest thanks and gratitude, the noble gift of twenty-five thousand dollars from Mrs. Anna Woerishoffer, as an expression of the appreciation by her late husband, Mr. Charles F. Woerishoffer and herself, of the importance of the Medical Profession to the health and welfare of the public, as well as to individuals, and the necessity for the development of its highest culture.

Resolved, That the names of Mr. and Mrs. Charles F. Woerishoffer, be inscribed in the Academy for permanent record as Benefactors.

Resolved, That a copy of these resolutions, duly engrossed, and signed by the President, Recording Secretary and Treasurer, be transmitted to Mrs. Woerishoffer.

A. JACOBI, M.D., President.
A. M. JACOBUS, M.D. Recording Sec'y.
F. A. CASTLE, M.D., Treasurer.

COCAINE ADDICTION.

MR. EDITOR,— If any reader of your JOURNAL has met with a case of cocaine addiction and will send me the fullest details at his command, I'll thank him for the courtesy, reimburse him for any expense incurred, and give him full credit in a coming paper. J. B. MATTISON, M.D.

BROOKLYN, 314 State St.

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 16, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	715	332	20.80	—	7.02	2.08	7.28
Philadelphia	971,363	315	115	16.32	19.20	3.20	4.48	5.76
Brooklyn	630,000	282	125	24.85	12.60	8.40	1.40	10.15
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	163	52	15.86	18.30	2.44	2.44	8.54
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	136	45	24.42	17.02	4.44	2.96	7.40
Cincinnati	325,000	107	46	32.55	14.88	8.37	1.86	16.74
New Orleans	238,000	98	21	30.60	14.28	7.14	—	2.04
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	96	33	27.04	11.14	5.20	5.20	4.16
Pittsburgh	190,000	73	28	35.00	12.60	1.37	.98	11.33
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	22	9	36.40	18.20	18.20	4.55	4.55
Charleston	60,145	50	25	12.00	6.00	2.00	—	—
Worcester	68,383	21	7	—	12.28	—	—	—
Lowell	64,051	22	4	22.75	18.20	9.10	4.55	9.10
Cambridge	59,660	21	7	23.80	28.56	14.28	—	9.52
Fall River	56,863	19	8	52.63	—	15.68	21.04	5.26
Lynn	45,861	13	4	—	7.69	—	—	—
Lawrence	38,825	10	3	10.00	10.00	—	—	—
Springfield	37,577	14	5	35.70	7.14	14.28	7.14	7.14
New Bedford	33,393	7	2	14.28	28.56	14.28	—	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	5	1	—	—	—	—	—
Holyoke	27,894	8	5	12.50	25.00	12.50	—	—
Chelsea	25,709	5	2	—	40.00	—	—	—
Taunton	23,674	4	2	25.00	—	—	—	—
Haverhill	21,795	—	—	—	—	—	—	—
Gloucester	21,713	2	0	—	—	—	—	—
Brockton	20,783	—	—	—	—	—	—	—
Newton	19,759	5	1	20.00	—	20.00	—	—
Malden	16,407	4	2	25.00	25.00	—	—	25.00
Fitchburg	15,375	7	1	—	—	—	—	—
Waltham	14,609	4	1	25.00	—	—	—	—
Newburyport	13,716	4	1	—	25.00	—	25.00	—
Northampton	12,896	—	—	—	—	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,235: under five years of age 887; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 505, consumption 230, lung diseases 192, diphtheria and croup 169, diarrhœal diseases 138, typhoid fever 64, malaria fever 57, whooping-cough 22, measles 19, scarlet fever 13, erysipelas 10, cerebro-spinal meningitis eight, puerperal fever four, small-pox (Brooklyn) one. From malarial fevers, New Orleans 17, New York 11, Baltimore 10, Brooklyn seven, District of Columbia six, Philadelphia and Charleston three each. From whooping-cough, New York nine, Brooklyn and Baltimore three each, Nashville two, Philadelphia, Cincinnati, District of Columbia, Pittsburgh and Lawrence one each. From measles, New York eight, Pittsburgh five, Brooklyn, Boston and Charleston two each. From scarlet fever, New York and Cincinnati four each, Philadelphia three, Pittsburgh and Springfield one each. From erysipelas, District of Columbia four, New York, Brooklyn, Boston, Cincinnati, New Orleans and Pittsburgh one each. From puerperal fever, New Orleans two, Boston and District of Columbia one each.

In the 23 cities and greater towns of Massachusetts with a population of 1,048,322 (population of the State 1,941,465), the total death-rate for the week was 17.41 against 20.28 and 20.21 for the previous two weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817 for the week ending October 2d, the death-rate was 20.6. Deaths reported 3,592: infants under one year of age 1,206; acute diseases of the respiratory organs (London), 187; diarrhœal diseases 532, scarlet fever 61, fever 59, diphtheria 33, measles 32.

The death-rates ranged from 15.2 in Brighton to 29.2 in Manchester; Birkenhead 21.3; Birmingham 21.5; Hull 24.3; Leeds 27.7; Leicester 22.0; Liverpool 26.4; London 17.0; Nottingham 21.6; Sheffield 23.2; Wolverhampton 27.4.

In Edinburgh 14.8; Glasgow 21.8; Dublin 22.8.

For the week ending October 2d, in the Swiss towns, there were 45 from diarrhœal diseases, consumpton 23, lung diseases 10, diphtheria and croup four, typhoid fever two.

The death-rates were: at Zurich 1.9; Geneva 15.1; Basle 25.2; Berne 21.4.

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 23, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	676	282	32.20	15.75	7.95	1.05	8.70
Philadelphia	971,363	341	108	15.66	15 37	1.74	4.64	7.25
Brooklyn	690,000	311	152	22.40	10.24	4.16	1.60	10.24
Chicago	630,000	218	95	24.18	8.28	5.06	4.14	11.96
Boston	390,406	177	59	10.83	15.30	2.85	2.28	5.13
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	—	—	—	—	—	—	—
Cincinnati	325,000	93	39	19.95	16.81	5.25	2.10	7.35
New Orleans	238,000	—	—	—	—	—	—	—
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	96	34	19.76	12.48	2.24	4.16	7 28
Pittsburgh	190,000	71	34	29.61	2.82	4.23	1.41	9.87
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	21	6	23.80	14.34	4.76	—	14.34
Charleston	60,145	46	26	—	—	—	—	—
Worcester	68,383	16	7	32.25	18.75	6.25	—	18.75
Lowell	64,051	28	9	25.00	11.11	3 57	—	17.85
Cambridge	59,000	23	5	8.70	13.05	—	4.35	—
Fall River	56,863	19	10	21.04	10.52	15 78	5.26	—
Lynn	45,861	11	3	18.18	9.09	9.09	—	9.09
Lawrence	38,825	14	—	—	14.28	—	—	—
Springfield	37,577	16	8	12.50	6.25	—	—	6.25
New Bedford	33,393	17	6	41.16	11.67	23.52	17.64	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	10	3	—	10.00	—	—	—
Holyoke	27,894	9	3	22.22	22.22	11.11	11.11	—
Chelsea	25,709	14	2	7.14	14.28	—	7.14	—
Taunton	23,674	6	1	—	16.66	—	—	—
Haverhill	21,795	—	—	—	—	—	—	—
Gloucester	21,713	5	1	—	20.00	—	—	—
Brockton	20,783	—	—	—	—	—	—	—
Newton	19,759	5	1	—	40.00	—	—	—
Malden	16,407	7	3	42.84	14.28	—	14.28	28.56
Fitchburg	15,375	5	4	—	—	—	—	—
Waltham	14,609	6	2	16.66	16.66	—	—	—
Newburyport	13,716	5	0	—	—	—	—	—
Northampton	12,896	4	2	—	—	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,272: under five years of age 905: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 377, consumption 286, lung diseases 208, diphtheria and croup 187, typhoid fever 55, diarrhœal diseases 41, whooping-cough 22, malarial fevers 22, scarlet fever 18, measles 14, cerebro-spinal meningitis seven, erysipelas five, puerperal fever four. From malarial fevers, New York 10, Brooklyn nine, District of Columbia two. From whooping-cough, Brooklyn nine, New York four, Philadelphia and Pittsburgh three each, Chicago, District of Columbia and Lowell one each. From scarlet fever, Philadelphia, Chicago and Cincinnati four each, New York and Pittsburgh, three each. From measles, New York nine, Pittsburgh three, Brooklyn and Nashville one each. From cerebro-spinal meningitis, New York and District of Columbia two each, Cincinnati, Worcester and Springfield one each. From erysipelas, Chicago two, New York, Brooklyn and Pittsburgh one each. From puerperal fever, New York, Chicago, Boston and District of Columbia one each.

In the 20 cities and greater towns of Massachusetts, with a population of 1,012,143 (population of the State 1,941,465), the total death-rate for the week was 20.23 against 17.41 and 20.28 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending October 9th the death-rate was 19.3. Deaths reported 3,369: infants under one year of age 999; acute diseases of the respiratory organs (London) —, diarrhœa 324, scarlet fever 70, fever 70, measles 42, diphtheria 42, whooping-cough 30.

The death-rates ranged from 14.2 in Bristol to 29.9 in Preston; Birkenhead 22.9; Birmingham 17.5; Bradford 18.3; Hull 20.7; Leeds 21.9; Liverpool 25.4; London 17.2; Manchester 23.1; Newcastle-on-Tyne 23.9; Sunderland 21.7.

In Edinburgh 19.9; Glasgow 23.9; Dublin 23.1.

For the week ending October 9th, in the Swiss towns, there were 30 deaths from consumption, diarrhœal diseases, 29, lung diseases 13, typhoid fever five, whooping-cough one, diphtheria and croup one.

The death-rates were: at Zurich 7.6; Geneva 13.1; Basle 13.3; Berne 17.1.

The meteorological record for two weeks ending October 23, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Oct. 16, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, ...10	30.227	58.0	65.1	56.1	88.0	67.0	66.0	73.7	N.	S.E.	S.W.	6	6	5	C.	C.	C.	—	—
Monday, .. 11	30.162	63.8	70.9	54.1	74.0	40.0	74.0	62.7	W.	S.W.	W.	11	13	12	C.	C.	C.	—	—
Tuesday, ..12	29.908	66.4	79.5	56.2	78.0	41.0	80.0	66.3	W.	W.	W.	9	7	10	C.	F.	F.	—	—
Wednes... 13	30.127	59.7	63.6	59.0	85.0	77.0	74.0	78.7	N.E.	E.	S.E.	14	10	4	O.	O.	C.	—	—
Thursday, 14	30.058	55.4	59.2	45.6	80.0	70.0	88.0	79.3	S.E.	S.E.	S.	6	15	7	C.	F.	O.	—	—
Friday, ...15	29.734	61.1	71.2	50.1	91.0	55.0	56.0	67.3	S.	W.	W.	15	20	18	C.	O.	C.	—	—
Saturday, .16	30.196	58.8	59.3	34.1	60.0	47.0	56.0	54.3	N.W.	N.W.	N.W.	16	21	9	C.	C.	C.	8.00	0.06
Mean, the Week.	30.060	56.3	69.4	49.4				68.9											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

Week ending Saturday, Oct. 23, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, ...17	30.370	40.4	49.1	27.2	68.0	27.0	65.0	53.3	W.	S.	S.	6	14	4	C.	O.	O.	—	—
Monday, .. 18	30.355	48.6	51.8	44.5	87.0	75.0	75.0	79.0	N.	E.	E.	4	13	4	O.	C.	O.	—	—
Tuesday, ..19	30.554	45.0	53.2	39.6	90.0	62.0	72 0	74.7	N.	S.E.	S.W.	6	10	5	F.	C.	C.	—	—
Wednes... 20	30.315	53.5	64.9	39.9	87.0	58.0	90.0	78.3	W.	S.W.	S.W.	6	13	13	C.	C.	F.	—	—
Thursday, 21	29.908	56.9	66.0	49.0	89.0	47.0	59.0	65.0	S.W.	N.W.	N.W.	9	24	4	F.	C.	C.	—	—
Friday, ...22	29.995	52.9	64.0	40.0	76.0	42.0	51.0	56.3	W.	S.W.	W.	7	20	7	C.	C.	C.	—	—
Saturday, .23	30.201	49.3	56.1	44.9	70.0	60.0	53.0	61.0	N.W.	S.E.	N.E.	8	7	13	C.	C.	C.	3.00	0.05
Mean, the Week.	30.255	49.5	57.6	40.7				66.8											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 23, 1886, TO OCTOBER 29, 1886.

WEBSTER, WARREN, major and surgeon. Leave of absence on account of sickness further extended one year on account of sickness. S. O. 244, A. G. O., October 20, 1886.

BILLINGS, J. S., major and surgeon. Granted leave of absence for eight days. S. G. 246, A. G. O., October 22, 1886.

LANDERDALE, JOHN V., captain and assistant surgeon. Leave of absence extended one month. S. O. 249, A. G. O., October 26, 1886.

CARSON, Jos. K., captain and assistant surgeon. Granted leave of absence for one month, to take effect when his services can be spared. S. O. 246, A. G. O., October 22, 1886.

MOSELEY, E. B., captain and assistant surgeon. Relieved from duty in Department of the Columbia and ordered to report in person at headquarters, Division of the Pacific, for assignment to duty. S. O. 87, Division of the Pacific, October 16, 1886.

TAYLOR, B. D., captain and assistant surgeon. From Department East to Columbus Barracks, Ohio.

TESSON, L. S., captain and assistant surgeon. From Department Texas to Department East.

BARROWS, C C, first lieutenant and assistant surgeon. From Department of Arizona to Department East.

EGAN, P. R., first lieutenant and assistant surgeon. From Department of Arizona to Department of Texas.

WALKER, F. V., first lieutenant and assistant surgeon. From Department East to department of Texas. S. O. 244, A. G. O., October 20, 1886.

CARTER, E. C., first lieutenant and assistant surgeon. Granted leave of absence for six months, with permission to apply for an extension and to go beyond sea, to take effect when his services can be spared. S. O. 244, A. G. O., October 20, 1886.

BLACK, CHARLES S., first lieutenant and assistant surgeon. Granted leave of absence for two months on surgeon's certificate of disability, to take effect when his services can be spared. S. O. 244, A. G. O., October 20, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING OCTOBER 30, 1886.

DIEHL, OLIVER, passed assistant surgeon. Granted three months leave from 26th inst.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING OCTOBER 23, 1886.

URQUHART, F. M., passed assistant surgeon. Relieved from duty at Cape Charles Quarantine, to proceed to Washington, D.C., with Steamer "Woodworth," October 20, 1886.

WASDIN, EUGENE, passed assistant surgeon. Promoted and appointed passed assistant surgeon, from October 1, 1886, October 20, 1886.

WILLIAMS, L. L., assistant surgeon. Granted leave of absence for three days, October 16, 1886.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — THE SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE will meet at 19 Boylston Place, on Wednesday, November 10, at 7.45 o'clock. Papers: Dr. P. C. Knapp, "An Unusual Form of Professional Neurosis." Dr. H. C. Haven, "A Plea for the more careful Consideration of the Importance of the Methods and Manner of Infant Feeding." Dr. F. C. Shattuck, "A Case of Malignant Endocarditis." Dr. E. W. Cushing, "Fatal Perforation of the Appendix Cœci, with Specimen."

ALBERT N. BLODGETT, M.D., *Secretary.*

F. I. KNIGHT, M.D., *Chairman.*

GYNÆCOLOGICAL SOCIETY OF BOSTON. — The next meeting of the Society will be held at the Medical Library Room, No. 19 Boylston Place, on November 11th, at four o'clock, P.M. Papers: Dr. W. Thornton Parker's paper postponed from last meeting, entitled "The Removal of a Large Vaginal Tumor." Dr. E. W. Cushing, "The Use of Irrigation in Gynæcology." Dr. Cushing will also show with the microscope specimens of the *gonococcus*.

H. J. HARRIMAN, *Secretary.*

Original Articles.

THREE CASES OF SUPPURATING OVARIAN TUMOR TREATED BY DRAINAGE.[1]

BY J. W. ELLIOT, M.D.

THESE cases seem naturally to divide themselves from other abdominal operations, I therefore report them separately.

CASE I.— CYST DISCHARGING INTO RECTUM: DRAINAGE PER RECTUM. CURED.

Miss C. was a servant, twenty-seven years old. I first saw her on October 27th, 1882. She was thin and in miserable health. She complained especially of bearing-down pains and of a constant discharge of pus from the rectum. Five years previous she had experienced great relief from a sudden discharge of pus from the rectum. From that time she had very little trouble until two years before I saw her, when the discharge began again. She suffered from constant pain in the lower abdomen and had frequent attacks of vomiting. She was very constipated and every movement caused severe pain.

On examination I found a tumor the size of a large orange in the right side of the pelvis, the uterus being pushed to the left. The uterus and tumor were evidently bound together by adhesions, but the whole mass was movable in the pelvis. I considered the case one of suppurating cyst or fallopian tube discharging into the rectum, and advised her to enter the Free Hospital for Women, which she did.

November 23d. Under ether I succeeded in finding the opening into the cyst, which was very high up in the rectum. I was able to bring this opening into view by putting a Sims's speculum into the rectum (patient in Sims's position) and pulling down the anterior wall with double hooks and tenaculum. This opening being dilated and enlarged, several ounces of pus were evacuated. A drainage-tube was put in and the cyst washed out. This operation caused only slight constitutional disturbance. The cavity was washed out regularly; the discharge diminished to a certain extent and the tumor became smaller, but the soft rubber drainage-tube gave us trouble by getting bent and clogged, and finally it was removed in about ten days because it caused severe pain of the anus. After waiting some weeks to see if the cavity was disposed to close, it became evident that the tumor still contained pus and required further attention.

January 18th. Ether was again given. The opening being dilated as before, numerous partitions inside the cavity were broken down with the finger. In this way the contents was thoroughly evacuated. Drs. Baker and Davenport were present and kindly assisted me. I then placed a hard-rubber tube, curved like a male catheter, which I had had made especially for this case, to obviate the difficulties caused by the soft rubber tube after the previous operation. The temperature rose to 104.2° F., but soon subsided. The cyst cavity could be thoroughly washed out with a catheter passed up inside the hard-rubber drainage-tube.

January 27th. The patient was doing well; the wash water returned clear, but there was severe pain.

January 30th. The abdomen was swollen and tender, the patient had a bad, hollow-eyed look, the temperature was raised and the pulse rapid. There was evidently a beginning peritonitis. The drainage-tube was removed and a poultice applied to the abdomen.

February 3d. The above symptoms were disappearing.

February 7th. Patient much better, eating well. From this time on there was a steady improvement, and on February 16th, she was up and about the ward.

March 4th. There was no discharge from the rectum. Patient in good condition.

March 8th. Patient discharged from the hospital cured.

I saw her again about a year later. She had gained forty pounds since the operation. The cyst, had entirely disappeared. The uterus was bound tightly to the sacrum from the contraction of the old cyst cavity. I afterwards freed the uterus from the sacrum, and when last seen in 1885, she was perfectly well.

CASE II.— CYST AND PERITONEUM INFLAMED, DRAINAGE THROUGH ABDOMINAL WALL: COUNTER OPENING IN VAGINA. CURED.

Miss D., nineteen years old, was sent to me by Dr. W. A. Dunn and was first seen at my office March 23d, 1885. Six months previous she had had difficulty in micturition: three months later she noticed swelling and pain in the lower abdomen. This had gradually increased. She had been seen by Dr. F. B. Harrington, who informs me that he found her with a temperature of 103° F., and put her to bed. After a month's rest in bed she was able to return to her work. But the pain and swelling soon became much worse. The menstruation had been natural until the last three months, during which time it had been very profuse, so much so that she had been much pulled down from the loss of blood. She was thin and very pale, and in wretched condition.

The outline of a fluctuating tumor was indistinctly felt just below the umbilicus. It had the indistinct feeling that an ovarian tumor might have if a blanket were placed between the tumor and the abdominal wall. The tumor was dull on percussion, while the flanks were tympanitic. The uterus was clearly felt in antiflexion, separate from the tumor but not freely movable.

The diagnosis was ovarian cyst, and she was advised to enter the Free Hospital. The operation was done on April 7th, 1885. On opening the abdomen I found the peritoneum from one-fourth to one-half an inch thick, very red and vascular, and studded with small gray granules. This peritoneum did not look in the least like anything I had ever seen, it was so red and vascular that it resembled liver or kidney tissue. When I opened it, it seemed as if I must have cut some strange organ. It bled profusely at every nick. In fact I should not have been in the least surprised had this patient died within six months of cancer of the peritoneum or tuberculosis. The cyst was finally reached and found to be very firmly adherent in every direction. Its removal was simply impossible. It contained two quarts or more of pus. The cyst was washed and sponged out and its walls stitched to the abdominal wall. A large opening was left through which two large drainage tubes were inserted. Dr. Whitney examined the fluid and reported that it was pus, but was probably from a cyst cavity.

There was very little disturbance from the opera-

[1] Read before the Boston Society for Medical Improvement, October 25, 1886.

tion. The temperature was never above 100° F. The cyst discharged freely and was washed out twice a day with carbolic 1-80. The patient was up and about in two weeks. She remained in the hospital until June 11th. The cyst was constantly washed out and the cavity contracted slowly. When she left the hospital the cavity was four inches deep and the tube three inches long. She had gained much flesh and strength. During the summer I saw her every two or three weeks and gradually shortened the tube. The discharge was much diminished. She appeared one day and stated that she had just been married.

July 30th. The cavity was three and one-half inches deep and barely large enough to admit a one-fourth inch drainage-tube. It discharged freely. Two hard tender lumps could be felt, one on each side of the fundus uteri.

In the fall the condition was much the same. The lumps above noticed were found to contain pus and were opened into the cavity. I washed the cavity with every known disinfectant and astringent, iodine, Heaton's hernia mixture, and finally with spirits of turpentine. All to no purpose, the cavity would not close.

February, 1886. She re-entered the hospital. A counter opening was made from the vagina into the bottom of the cavity and a large tube put through from the abdomen to the vulva. This caused very free suppuration which gradually subsided under constant washing. The tube was gradually shortened and the abdominal wound allowed to close. After the tube had been pulled down out of the abdominal opening it was at first found impossible to prevent it from slipping out through the vagina. It was, however, finally held in place by a silver wire passed up through the abdominal wound where it was fastened to a piece of wood and could be gradually led down by unwinding the wire.

In June she left the hospital with only a very shallow opening in the vaginal wall, all the tubes having been removed.

July 19th. I saw her at my office and found that all the lumps and hardness had disappeared from the abdomen. The openings had healed except that the old scar in the abdomen breaks down and discharges a little blood at each menstruation. She was perfectly well and keeping house.

CASE III.— CYST DISCHARGING PER VAGINA, DRAINAGE THROUGH ABDOMEN AND VAGINA: RELIEVED.

Mrs. W. was advised by Dr. Bush to apply to the Free Hospital. I first saw her at her home on April 23, 1885. She was an actress, aged twenty-eight. In September, eight months before I saw her, she had first noticed an enlargement of the abdomen. She then lived in a small Western town. Her doctor told her that she had a tumor. It grew larger very rapidly, and in November it was tapped, and thirty pounds of fluid drawn off. Six weeks later it was tapped again, and three gallons more fluid drawn off. At the same time, an attempt was made to open the tumor through the vagina, but no fluid was so discharged. After this operation she was sick in bed for three months. She was brought to Boston in March, since which time she had been very ill. Two weeks previous to my visit, the tumor broke and discharged through the vagina. Since then she had had a profuse greenish discharge. She suffered great pain, and had taken a grain and a half of morphia a day for several months. She had always been well before this illness, with the exception of two miscarriages eight years previous.

The patient was very small and thin, and in a deplorable general condition. She was feverish and discouraged. A large, tender, fluctuating tumor filled the whole abdomen, extending so high up that the ribs were lifted. The cyst was discharging pus through the vagina. The uterus was crowded up behind the pubes.

When she entered the hospital the pulse was 150, and very poor; the temperature was 103.5° F. There was occasional vomiting of food. At a consultation of the hospital staff, Dr. Baker, Dr. Davenport, and myself, it was decided that the tumor was a suppurating ovarian cyst, and that the patient was in a very critical condition, and would surely die unless something was done immediately.

On April 27th I operated, without much hope that she would recover. On opening the abdomen, I found the cyst universally adherent, and filled with stinking pus. This being evacuated, the hand was passed in, and a large mass of papillomatous growth scooped out. This caused much bleeding, and sponges were packed into the cyst. After the large cyst was emptied, a small tumor of the other ovary became apparent. An attempt was then being made to dissect out the sac of the cyst when the patient became collapsed, the pulse being almost imperceptible. A drainage-tube was then pushed through Douglas's fossa into the vagina, and the cyst wall was quickly stitched to the abdominal wall. One drainage-tube went through the cyst, and another was only in the abdominal opening. Dr. Green, Dr. Johnson, Dr. Clark, and the late Dr. Lombard assisted me.

The patient was put to bed with heaters. Stimulants were given by rectum and subcutaneously. She rallied in a few hours, and although the pulse was very weak for a few days, she was soon in much better condition than before the operation. The temperature fell to 99°, and stayed there for a time. The vomiting ceased, and the appetite improved. The cyst was washed out several times a day with an antiseptic solution. The discharge was profuse at first, but gradually diminished. She had an attack of bronchitis, and during a paroxysm of coughing, the vaginal tube, which had been cut from the abdominal tube, was forced out.

All went well then until the fourteenth day, when the temperature and pulse began to rise again; temperature 103.4° F., pulse 150. There was also great pain in the side.

March 15th. The patient was etherized, and on exploring the region where the pain was referred, it was discovered that one of the cyst-cavities had closed and formed an abscess. This was opened and drained.

Things looked better after this. She began to improve again, but on May 30th the pulse and temperature began to go up again, and it was impossible to keep the discharges from smelling.

June 2d. Under ether, an examination was made, and an abscess broken open inside the cyst. In searching for more pus-cavities, the cyst wall was accidentally opened, and the finger went into the peritoneal cavity. Fresh drainage-tubes were put into all the cavities, and one was passed again through Douglas's fossa into the vagina. After this operation there

was severe pain, requiring much morphia. The pulse continued rapid, and the patient was still in a critical condition.

June 4th. It was evident that an abscess was forming in the peritoneal cavity, around the hole made in the cyst wall at the last operation. There was great pain, some vomiting; almost all food was refused. Pulse 130, temperature 102.° The patient was very low.

June 15th. I etherized her again for the third time since the operation. The intra-peritoneal abscess was opened, and a large quantity of stinking pus evacuated. I then began a systematic search in all directions to find retained pus, and, to my dismay, I found a sponge at the bottom of one of the cavities. This sponge had been crowded in to stop the bleeding from the papillomatous growth, when the patient collapsed at the first operation, and had long since been forgotten. Everything was thoroughly disinfected, and all the tubes replaced. After a time some of the cavities closed, and the cyst was more easily drained. The large cyst-cavity gradually contracted. Finally, we made a desperate effort to break off the morphia, but failed, and I am sure that the patient would have died if we had continued to withhold it. She gradually gained strength until the end of June, when she was moved from the hospital. At home she continued to improve. All the tubes were removed, except the long one, which ran through the cyst.

July 28th. She was so much improved that she was up and about the room; was taking only one-quarter of a grain of morphia a day. The vaginal part of the tube was soon removed, and only a short tube remained in the abdominal opening. She went into the country for the summer, where she improved so much that when she walked into my office in October I did not recognize her. She had gained much flesh and strength. Since then she has been able to go about and enjoy life.

I saw her on October 21, 1886, when she told me that she had removed the tube a year ago, and that since that time the sinus would remain healed for several months at a time, but would suddenly break open and discharge pus for a few days, and then heal again. I found that the old tumor had disappeared, but that the small one on the other side had grown to the size of a cocoanut; I advised its removal.

It should be understood that the deplorable condition in which I first found the patient was due to the tapping which had been done several months previous. In spite of the outcry against tapping, we continue to meet patients suffering from that maltreatment.

Although we know from experience in ovariotomy that patients may tolerate an extraordinary amount of damage in the way of tearing out an adherent cyst wall, we also know that patients not infrequently die on the table, or soon after these most severe operations. Drainage offers a chance for some of the bad cases. I have taken pains to follow out these cases, in order to get a clear idea of the course and results of drainage. With this side of the picture complete, we shall be better prepared to decide in a given case whether to risk a very serious operation, or to go through with the tediousness of drainage. Schroeder and others have objected to drainage, on account of the tendency to recurrence. Rheinstaedter [2] reports seven cases where more or less of the cyst was left and drained; all seven recovered without recurrence. Certainly, there has been no special tendency to recurrence in my cases, and one was papillomatous, operated on one and a half years ago. If any of them recur in the future, I have, at least, the satisfaction of giving them a year or two of comfortable life. It may also be possible to do another operation, under conditions more favorable than the first.

These cases have raised the question of how ovarian cysts discharging into the various cavities are best treated. If the cyst is discharging into the rectum or vagina, an attemp should be made to drain in that direction, as in cases I and II. If the cyst is discharging into the intestine or bladder, it should be removed by laparotomy, and the opening into intestine or bladder closed by suture.

[2] Zeitschrift f. Geburt. v. Gynæcol., B. X., 1884.

THE MALE URETHRA.[1]

SOME NEW AND PRACTICAL OBSERVATIONS ON ITS ANATOMY IN RELATION TO ENDOSCOPY, LITHOLOPAXY, AND CATHETERIZATION.

BY OTIS K. NEWELL, M.D.,
Assistant in Anatomy at the Harvard Medical School.

During the early part of the present year, it occurred to me, in observing a case of litholopaxy at the Massachusetts General Hospital, that there could be no reason why the same sized tubes which so readily enter the normal urethra could not be applied to advantage in an endoscopic examination of the bladder, urethra, and other parts. I trust that the results of my investigation in this connection will not fail to be of interest and value. Three years ago, at Professor Dittel's clinic in Vienna, I had occasion to make an endoscopic examination of the urethra, with the instrument there in vogue, and from what I was enabled to see through its small calibre, together with Professor Dittel's rather sceptical views in regard to its general utility, I gave but little further attention to the subject of endoscopy. Having had made a No. 30 tube, however, a more particular description of which will be given further on, I was much surprised and gratified to find with what readiness and satisfaction the surface of the bladder or urethra could be examined by means of light thrown in by the ordinary laryngoscopic mirror. My first examinations were made upon the cadaver, and there the mucous membrane could be plainly seen, and any small body, such as a piece of sponge, a tack or screw, when introduced into the bladder, readily found and recognized. That bodies of considerable size could be easily introduced through the 30-tube naturally led to thoughts of instrumentation within the bladder, and of this I will speak more fully later on. The first tube I had made was one corresponding in length to the ordinary catheter, cut off at the lower or visceral end obliquely, at an angle of about 45°, and closed with a thin plate of glass. This, I later learned, corresponded much with Grünfeld's straight, fenestrated endoscope, and was designed to prevent the entrance of urine into the tube, and admit of inspection by placing the glass against the bladder wall. The rather obscure picture through the glass, however, led me to soon abandon this for a similar open tube, into which a staff, or guide, was inserted for its better introduction.

[1] Read before the Suffolk District Medical Society, October 30, 1886.

Since the clearness of view through the tube depended upon the amount of light thrown in, and this was determined by the length of the endoscope, I next endeavored to ascertain how short an instrument could be, and still admit of ready introduction into the bladder. The examination of a large number of cases for this purpose has led to what has been, to me, an astonishing result, considering the previous knowledge of this subject, at least, in its application. I find, namely, that an instrument, catheter, sound, or evacuating tube, having a length of five inches or more, can be readily introduced through the urethra into the bladder of any normal subject, the requisite manipulation being but little more difficult than that required in the introduction of instruments having the traditional measurement.

The pendulous portion of the urethra, the part anterior to the triangular ligament, can be readily folded together, so that its long axis occupies not more than from one and a half to two inches. I have found no case where an endoscope six inches in length could not be introduced into the bladder, so as to have two inches or more protruding from the visceral orifice. To ascertain this, I have made careful measurements of fifteen adult urethræ in subjects from thirty to seventy years of age, besides examining quite a large number of unrecorded cases. The length of the posterior urethra, made up of the membranous and prostatic portions, varies but little, the prostatic portion averaging about one and one fourth inches, and the measurement of the membranous region three-quarters of an inch or less. An enlarged prostate seldom increases the length of this portion to any great degree, the growth being mostly lateral, and affecting more its calibre and direction, the middle lobe, when much enlarged, standing as an obstruction before the vesical orifice.

We have then, in the male subject, an urethra, the posterior portion of which averages two inches in length, and presents beyond this, as its continuation, a canal which, from its anatomical structure, and that of its surrounding parts, is readily folded together, so as to have the same length, the variation in different individuals, when the urethra is thus apposed, being of no considerable degree.

The applied anatomy of the male urethra, then, is such that we may consider the length of this canal to be, for surgical purposes, but four inches, increased, in cases of enormous hypertrophy, to a possible six. Better than to further attempt the demonstration of this fact, I will leave it to the more convincing investigation of those of you to whom it may be of interest, and consider at once its application to the subjects indicated in the title of my paper.

ENDOSCOPY.

After becoming interested in this subject, I carefully read the admirable and voluminous work of Professor Grünfeld, who, by adopting the simple laryngoscopic mirror as a light source, and making numerous improvements in the endoscopic instruments, together with the most patient and systematic labor, has accomplished more than any of the recent workers on this subject. To all who may be interested in it, his book will prove of great value. It is sufficient to mention here that to the endoscope we owe most of our exact knowledge of urethral pathology, and an idea of what patient work with this instrument in the hands of Bozzini, Désormeaux, Grünfeld, and others has accomplished, may be obtained by quoting from the index to the illustrated plates in Grünfeld's work: 43, Urethritis Simplex; 48, Urethritis Granulosa, with rigid walls; 55–58, Two Ulcers on the urethral mucous membrane of a man; 59, Urethral Chancre; 61, Primary lesion of syphilis during cicatrization, the rigidity of the walls permitting the introduction of the endoscope into the healthy urethra beyond; 66, Epithelial thickening of the mucosa in stricture after partial dilatation; 79, Stricture, with a bridge apparently two openings into the urethra beyond; 81, Stricture of long standing after thorough dilatation (22, Charriere); 82, Urethral polyp on the posterior wall of the urethra; 97–101, Pictures taken from an urethral carcinoma; 103, Posterior portion of a diverticulum on the lower urethral wall; 102, Tumor of the mucous membrane of the bladder in cystitis; 108, Cicatrix following a vesico vaginal fistula.

Notwithstanding all this, however, the endoscope has hitherto been chiefly applied to the examination of urethral diseases, and since the cases where its use in this connection is of great practical value are the exception, I will only consider its application in the modified form which I have ventured to construct.

The endoscope which I have had made (Fig. 1) differs from Grünfeld's, first, in having a 30-calibre determined by that of the normal urethra, 30 to 33, Grünfeld's tubes never being made larger than 24, and averaging from 18 to 20. Second, in the obliquity of its visceral opening, so that inspection in all directions is made possible by the protrusion of the bladder wall or mucous membrane into its orifice. Grünfeld's straight, fenestrated tube has the window set in at a slight angle, in order to avoid light reflexes, but that author recommends only the tubes cut off at a right angle to the axis for general use, and never any with more than a slight variation from a right angle. Such tubes are undoubtedly best for urethral examination. Third, in being particularly designed for the inspection of the bladder, and permitting what has hitherto not been done, the introduction of instruments through an endoscope into the male bladder, so that, as with the forceps which I have had constructed for the purpose, a foreign body might be removed in this manner, instead of by operation, or with a lithotrite.

For the female bladder and urethra the instruments are similar, but much shorter, and may be of larger calibre. The external orifice of the female urethra, however, is not always larger than that of the male, and often requires forcible dilatation before admitting the introduction of instruments of large calibre.

My instrument is principally designed for the detection of foreign bodies and growths in the bladder, and as an aid in the solution of obscure symptoms of urethral and bladder disease. The fenestrated tube may be used with advantage in preliminary examination, as the mucous membrane and its vascular supply are much better seen in the full bladder. The open tube is used in the empty bladder, absorbent cotton or sponge tampons may be carried down with the forceps, or tampon holder, to dry the surface or remove any collection of urine.

Grünfeld, on the 208th page of his work, says: *An die Einführung von Instrumenten in die Harnblase unter Controle des Endoscops sowie deren Verwendung daselbst konnte aus begreiflichen Gründer nicht gedacht werden.* "The introduction of instruments

into the (male) urinary bladder, under control of the endoscope, as well as their application there, was, for apparent reasons, not to be thought of," and states further on, that his investigations have thus far been confined chiefly to the female bladder, easier of examination, but much less often the seat of disease. I have found no difficulty in introducing this instrument into the bladder of the living subject without ether, but would recommend anæsthesia for all bladder exploration. In urethral examination the local anæsthetic effect of cocaine suffices.

The use of the endoscope is not by any means limited to the examination of the urethra and bladder, but may be employed with advantage in exploring numerous other cavities, such as that of the uterus, the rectum, high up, the nasal and pharyngeal cavities; and, also, sinuses and cavities following disease or injury. I see no reason why, introduced as a trocar

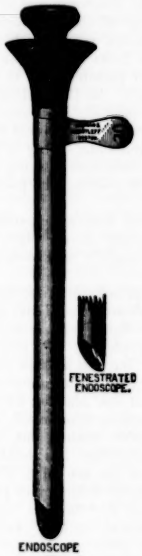
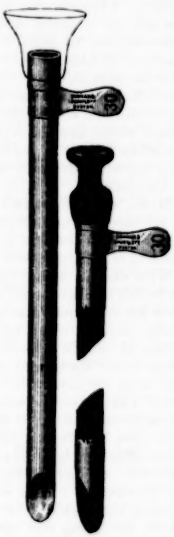


Fig. 1.


Fig. 2.

canula, or through a slight incision into the abdominal or thoracic cavities, it could not be used to advantage in the diagnosis of obscure and serious affections.

The best light to use is reflected sunlight, and the tubes may be darkened on the inside but soon become dull enough on the inner surface to avoid trouble from light reflexes. Any topical applications made in the bladder or urethra with this instrument are much better and more scientific than those made somewhat blindly by other means.

In making the ocular end of the instrument I have preferred a simple funnel-shaped attachment, passed over the end of a tube, made like those for Professor Bigelow's evacuator. The very practical indicator being convenient for manipulation, and simple in construction.

LITHOLOPAXY.

In considering the changes which the above demonstrated fact suggests in litholopaxy, we have mainly to do with the process of evacuation, and here an important alteration in the construction of the evacuator is indicated. This consists in reducing the distance between the orifices of the present tube, that is the combined tube, made up of the part for insertion and the joints connected with the evacuator, from 15 3-4 inches to 10. In order to be evacuated every fragment must be lifted by the exhaust current with the column of water from the visceral orifice to the opening in the trap end of the tube, and that to materially shorten this distance much adds to the admirable working of Professor Bigelow's instrument, is readily understood.

Another, and what seems to me valuable, modification in the evacuating tubes is to have them made so as to be introduced with a staff and have left when this is withdrawn a tube with an orifice representing more than its full calibre and corresponding with it in direction (Fig. 2), so that the fragments, instead of entering the tube at an angle, are drawn directly into its orifice by the exhaust current. The obliquity of the opening is such that the bladder is held away by the extremity of the tube and is only drawn in when the latter is so placed that the orifice lies close to the wall and in a parallel plane, and under these conditions the bladder will be drawn into the orifice of any tube. A most valuable adjunct to the evacuator, however, and one which readily prevents aspiration of the bladder wall, or "fish bite," under ordinary circumstances, is Professor Bigelow's supply-pipe attachment, by means of which the volume of water in the bladder during operation may be quickly regulated to such a nicety that the tension of the bladder wall may be always kept where aspiration is practically out of the question.

In order to shorten the tube to a length of ten inches from the visceral orifice to the end of the trap, it is necessary to omit the first joint, which, with my tube, is not needed. When the guide is withdrawn, the outer end of the tube should be elevated so as to be as much above the bladder level as possible, and the thumb placed over the orifice until the bulb is attached. In withdrawing the tube it is unnecessary to detach it from the evacuator. A little manual dexterity is thus, in part, substituted for a joint which, although it gives a finish and neatness to the apparatus and operation, is not necessary, and increases the distance which a fragment must travel in order to be caught safely within the bulb. The accompanying drawings illustrate the tubes as described. The evacuating tube is readily converted into an endoscope by attaching the ocular piece. This and the staff are made of hard rubber and the instrument is thus very light. It would seem, perhaps, that the edges of the orifice are sharp enough to cut somewhat during manipulation, but such is not the case. The canal of these tubes being perfectly straight any impacted fragment can be readily removed and the tubes can be thoroughly cleansed by forcing through them a tight wad of cotton or sponge with the staff. These tubes also admit of the passage of larger fragments than the other tubes of a corresponding size. Their simple construction makes them much cheaper than Professor Bigelow's tubes. The object of these changes is naturally to increase the rapidity of evacua-

tion, and thus add somewhat to the efficacy of the evacuator which Professor Bigelow has already made so beautiful in its working. To any one who has studied its capabilities, by evacuating coal fragments from a glass globe, for example, and seen with what certainty they, sooner or later, are captured, I am not putting too frequent stress or compliment, if either be needed, upon the Bigelow evacuator.

If it has been my good fortune to contribute somewhat to the efficiency of this instrument, I must refer the same to the opportunities which a double service, as Dr. Bigelow's House Officer gave me, to become familiar with litholopaxy.

Compared under like conditions the modified evacuator removes fragments four or five times as rapidly. In a protracted operation this is, of course, a great advantage. My friend, Dr. Beach, of the Massachusetts General Hospital, has kindly used these tubes in the removal of a small stone, the fragments of which weighed 14.7 grammes. The working of the instrument was most satisfactory. I have also tested them thoroughly in evacuating fragments from the bladder of a dissecting-room subject, Dr. Whitney, the curator of the Warren Anatomical Museum, having been good enough to furnish me with a calculus.

If shortening and increasing the diameter of the shaft of a lithotrite add to its efficiency in any way, it would seem that the same urethral measurement might be taken into consideration in its construction. The length of divulsors should also be diminished so that the possibility of forcing them through the urethra into the bladder wall would be eliminated. Six inches is, I believe, sufficient length for any divulsor, and such a one is now being constructed.

CATHETERIZATION.

While an evacuating tube or an endoscope should be as short as possible, a catheter may be of any convenient length, and just what this is has probably been determined by making the instruments sufficiently long to give a good chance for manipulation, and leave length enough beyond the part grasped by the hand for introduction into the bladder. The standard length of catheters has thus been determined, and it is interesting to notice that nearly all urethral and bladder instruments, such as sounds, evacuating tubes and divulsors correspond in length to the ordinary metallic catheter. When, however, a catheter or tube is to be employed for washing out the vesical cavity, it should be as short, and of as large calibre, as possible, so as to best admit of the free passage of fluids and thick mucus, or other matter. In the introduction of urethral instruments it is perhaps well to remember that any elastic tube as it becomes attenuated diminishes the calibre of its canal, while on the other hand, an approximation of its walls in the longitudinal direction increases the same.

— Sir Andrew Clark has resigned from the staff of the London Hospital, where his service as physician had extended over a long period of years.

— A statue in memory of "Sister Dora" was recently dedicated in Walsall, England, the cost having been defrayed by Miss Lonsdale out of the profits which she had received from her biography of her deceased friend.

A CASE OF SUPRA-PUBIC LITHOTOMY.[1]

BY M. F. GAVIN, M.D.,
Visiting Surgeon, Boston City Hospital.

THE so-called modified high operation for the removal of stone from the bladder is still *sub judice*, and every case reported will assist in determining its proper place in practical surgery.

There can be no doubt of the advantage of the suprapubic operation as improved by Professor Petersen in some cases, as with large stones, especially when they are hard, in the very fat where it is difficult to reach the bladder through the perineum and those complicated with disease of the kidneys, or enlargment of the prostate, and where from paralysis or anchylosis of the lower extremities it is difficult to place the patient in the lithotomy position. The present question is not to determine its application to such exceptional cases, but to find out how far the operation should succeed perineal lithotomy and litholapaxy. I suppose the advantage of the high operation are the rapidity and readiness with which the operation can be done, freedom from the danger of troublesome hæmorrhage and no possible risk to the vesicular seminales or their duct. In the following case litholapaxy was out of the question by reason of the diminished size of the urethra, while perineal lithotomy, would have been nigh impossible, owing to the partial anchylosis of the lower extremities, leaving the high operation the only means of ridding the patient of his stone.

M. C., about forty-two years of age, an ex-soldier of intemperate and dissolute habits in the past, an opium-eater at present, and thoroughly broken-down, was first seen June, 1886.

With exception of repeated attacks of gonorrhœa his health had been good until about three years ago, when his spine was fractured in the lower dorsal and lumbar regions, resulting in paraplegia. He was an inmate of the City Hospital for months at that time, being finally discharged as incurable. For about one year after his injury he emptied his bladder by the use of a catheter; the urine becoming ammonical, was recommended to have his bladder washed out, and ever since the greater part of his urine has dribbled away, although he still continues the use of a silver catheter. Of late, he has had great difficulty in passing the catheter; as he expressed it "there is something against which the instrument strikes," and to relieve him I was sent for. His condition was one of extreme filth, contents of bladder and bowels besmeared his perineum, inside of thighs and genitals: his wife having died of phthisis, none but young children had been left to attend to his wants, which accounted for the deplorable condition he presented.

There were two fistulous openings in the urethra, no doubt due to violent use of the catheter; one was in the penile portion and a second at the junction of the scrotum and perineum, through which the urine constantly ran; the perineum appeared fuller than normal. The urethra after division of meatus showed the presence of a stricture in the membranous portion permitting the passage of a No. 10 English catheter: a small size sound was introduced with difficulty into the bladder but could be only partially rotated owing to the constricted and thickened bladder. A large stone (possibly more than one) was detected, and

[1] Read before the Boston Society of Medical Observation, Oct. 4, 1886.

lithotomy recommended. Three months later, on September 8th, 1886, the patient entered the City Hospital. His condition at that time was about that described, except that he had had diarrhœa for several days.

Under the use of salicin, restricted diet and cleanliness, his condition was so far improved as to allow Petersen's operation to be performed on the fourth day after entrance. For two days before the operation unsuccessful attempts were made to wash out the bladder with a warm solution of boracic acid.

Operation. The usual antiseptic precautions were used. The patient was etherized. A pyriform-shaped bag, well greased, was introduced into the rectum and inflated. The bladder was injected with about ten ounces of warm solution of boracic acid. A rubber ligature around the penis was powerless to keep the bladder distended, as the greater part of the injected fluid came away through the fistulous openings. The distension of the bladder was therefore very imperfect, and the advantages of rectal distension not fully attained. A vertical incision four inches long, was made in the median line above the symphisis: after division of skin, linea alba and fascia transversalis, the knife was dispensed with. The bladder was found readily down in the pelvis, and was now seized with tenaculum and held while an incision of about one and a half inches long was made. Two stout ligatures were at this stage passed through the edges of the wound in the bladder and given to an assistant to hold. The finger was inserted into the bladder and detected the presence of two stones. Both fore-fingers were now introduced in the manner recommended by Sir Henry Thompson, and an effort made to extract the stones but without success. The wound in the bladder was enlarged, lithotomy forceps introduced, and another effort made to dislodge the stones from a pocket in the thickened walls of the bladder; the air bag was now removed from the rectum and the finger of an assistant passed within the sphincter lifted the stones, which were then seized by lithotomy forceps and extracted. A large quantity of gravel-like detritus was removed and the bladder thoroughly irrigated. No attempt was made to suture its walls; ligatures were allowed to remain for twenty-four hours. Two sutures were passed through each angle of the wound, a thick pad of iodoform gauze applied with pressure. The peritoneum was not seen during the operation. The fistulous opening in the perineum was curetted and packed with iodoform gauze. The subsequent care of the case resolved itself into irrigating the bladder, attention to personal cleanliness and supporting the patient. No symptoms of cellulitis or extravasation of urine appeared. Urine came through abdominal wound in diminished quantity until October 6th, when the wound was practically healed. The temperature never exceeded 99°. Great relief from pain followed the operation with marked improvement in the general health of the patient. The fistulous opening in the penile part of penis healed over, that in the perineum is not quite healed, but no water comes through it. The patient was discharged from the hospital October 16th. The stones that were removed were very different in appearance; the larger being quite rough and crumbly on surface and of a dirty grayish color, the other being smoother, harder, and heavier in proportion to its size. Total weight, eight hundred and twenty-seven grains.

A CASE OF SUPRA-PUBIC LITHOTOMY.[1]

BY A. T. CABOT, M.D.

The patient, a man of forty-nine years, entered the Massachusetts General Hospital, September 7, 1886, with the following history: He was in good health up to eight years ago, at which time he began to have pain and difficulty in micturition. This trouble gradually increased, the pain being often very severe after passing water, and urination became very frequent. He has noticed blood in the water but once.

During the last two years his sufferings have been extreme; he has been confined to the bed much of the time, and has become addicted to the use of opium.

During the last eight months his stream has been getting very small, and he has been in the habit of using bougies to obtain relief. Attempts by physicians to reach the bladder have been unavailing, and have caused considerable bleeding from the urethra.

He was, at entrance, very much emaciated, and was troubled by chronic diarrhœa, which was accompanied by great pain through the rectum and bladder. The urine, which passed in a very small stream, almost by drops, was extremely foul, ammoniacal, and loaded with pus. A stricture arrested the sound behind the scrotum; the prostate was somewhat enlarged.

On September 11th, ether was administered, a fine filiform bougie was, after some difficulty, passed through the stricture, and it was divulsed. A searcher was then introduced, and a large stone was felt.

The lithotrite did not pass easily, but was caught in false passages, one of which was of considerable length. After a long, careful trial, it finally entered the bladder and grasped the stone, which was hard, and measured two inches in the diameter seized.

It was evident that with so large and hard a stone, and with a urethra offering such obstacles to the passage of instruments, litholapaxy would be unwise, and the size of the stone made the supra-pubic incision the preferable one among cutting operations.

No rectal colpeurynter was at hand, so that nothing further was attempted on that day.

September 15th (two days later), supra-pubic lithotomy was performed as follows: The patient being etherized, a gum-elastic catheter was introduced, and a rubber band was tied snugly around the penis, to prevent the escape of water. The bladder was emptied, washed out, and then filled with a two per cent. solution of boracic acid. Without any forcing, it held sixteen fluid-ounces, and even then, the supra-pubic region was tympanitic to percussion.

The colpeurynter, which had been introduced into the rectum, was now slowly filled with water until fourteen fluid-ounces had been thrown in. As the rectal bag filled, the bladder could be felt more and more distinctly above the pubes, and the percussion over it became duller, though never reaching flatness.

An incision three and a half inches in length was made from the symphysis pubis upwards, and was carried down between the muscles into the prævesical space. The peritoneum was then seen to reach down nearly by to the pubes.

At first this was not easy to draw up, but after incising a thin fascia below it, which seemed to be the prolongation of the transversalis fascia (fascia propria of Velpeau), the left forefinger could be hooked under

[1] Reported to the Boston Society for Medical Observation, October 4, 1886.

the peritoneal fold, and this was easily drawn out of the way while the bladder was incised.

The finger of the left hand then followed the knife into the bladder, and by it the vesical wall was readily held up while the incision was enlarged to the necessary extent. The stone was then seized and extracted. It was very hard, heart-shaped, and weighed 1,180 grains.

There was no hæmorrhage of any account. Two rubber drainage-tubes were introduced, and as the water was allowed to escape from the rectal bag, they were carried down with the floor of the bladder as it sank into the pelvis. They were then secured in place by stitching them into the lower angle of the wound, and the bladder having been again thoroughly washed out, an antiseptic dressing, with iodoform gauze next the wound, was applied.

The drainage-tubes were left of sufficient length to be carried over the side of the bed into a bottle, and by their syphon action they kept the bladder empty. The dressing was changed daily, and irrigation was practised twice a day with a boracic solution. The double tube made this possible without disturbing the dressing.

For the first twenty-four hours after the operation there was considerable pain, probably exaggerated by the patient, and more difficult to control on account of his previous morphia habit.

It is of interest to note how slight and of how short duration was the fever following the two operations. The morning following the divulsion of the stricture the temperature was 101°. The next morning it was normal, and in the evening following the operation for stone it reached 102.4°, but after that never exceeded 100°.

On account of the disabled condition of the urethra, the drainage was kept up longer than would usually be necessary. One tube was removed on the twelfth day, and the remaining one on the fifteenth day after the operation.

A sound (about No. 25 French) was passed, and slipped easily along into the bladder without catching in any of the false passages. The wound rapidly contracted, and the greater part of the urine passed by the urethra.

On the twentieth day after the operation the patient was up and about, with only a small, fistulous opening where the wound had been, and on the twenty-sixth day he went home by his own wish.

There is some interest attaching to the indications for the selection of the appropriate operation in this case. The effect of false passages in increasing the risks of a litholapaxy I have never seen mentioned, and yet, in case of a stone of any considerable size, their existence so complicates the operation as to add greatly to its dangers.

In the case that I have reported, had the stone been of moderate size and of soft consistency, its removal could have been effected with perhaps two introductions of the lithotrite, and two more of the evacuating tube, and with care, this amount of manipulation would have been possible without serious injury to the urethra, but with a stone of the size found, the repeated introduction and prolonged use of instruments would have been required, and would have caused great damage to the parts. Lithotomy was, therefore, indicated, and the size of the stone made the suprapubic method preferable.

RECENT PROGRESS IN PATHOLOGY AND PATHOLOGICAL ANATOMY.

BY WILLIAM F. WHITNEY, M.D.

THE PHYSIOLOGICAL FUNCTIONS OF THE MARROW AND ITS RELATIONS TO DISEASE.

THE interest which has been aroused of late years from the discovery by Bizzozero and Neumann of nucleated red corpuscles in the marrow and the changes which have been noticed in it in association with pernicious anæmia have induced Geelmuyden [1] to take up the subject.

It has been known for a long time that in mammals during their fœtal condition the red-blood corpuscles were provided with nuclei, and that this is a persistent condition in the lower vertebrates. In the fœtus they are found in blood, but in the greatest numbers in the liver and spleen, and these two organs have been regarded, therefore, as their place of development. They occur first in the marrow in extra uterine life, while they disappear at this time from the blood and organs. From these premises Bizzozero and Neumann naturally drew the conclusion that this was the source of their supply after birth.

Before giving the results of his own work a brief description of the generally-received details of the kinds and structure of the marrow is given, as essential to a clear understanding of the subject.

Three sorts have been distinguished. The yellow or fatty, the red or lymphoid, and the gelatinous marrow. The last is found only under pathological conditions: the first occurs in the adult, in all the bones of the extremities, even in the spongy ones: while the red marrow is restricted to the bones of the trunk, namely, the vertebral column, ribs and sternum.

The cells of the red marrow vary greatly in form and character. If a fresh preparation is examined in a three-fourths per cent. solution of common salt there is seen a mass of round cells of all sizes. The protoplasm of these is partly homogeneous and in part contains a number of refractive granules. In close relationship with these stand the so-called nucleated red-blood corpuscles. These are small, more or less hyaline cells, more or less colored with hæmaglobine. At times they contain two distinct nuclei and the cell body shows indication of a line through the middle as if about to increase by division. Sometimes the nuclei are found partially protruding from the protoplasm, and even look as if lying free in a saucer-like depression. The author does not assert that the nucleus is lost in this way, but he has found nothing to support the older theory that it breaks up into granules and is dissolved, undergoing in this way, a sort of atrophy. Large granular cells with a complicated nucleus, called myeloplaques, are always found in the marrow. These lie imbedded in the parenchyma and are to be distinguished in many ways from the osteoclasts lying close to the walls of the medullary spaces. Besides these there are spindle and star-shaped connective tissue cells, more or less rich in protoplasm, in large numbers.

Of especial interest are the pigmented cells and those containing blood corpuscles, in as far as they represent marked degeneration of the latter. The number thus contained may vary from one to twenty, but in rare instances as many as fifty have been counted in a single cell. In these all the steps of de-

[1] Virchow's Archiv., Vol. 105, p. 136.

struction can be followed, beginning with the perfectly fresh red-blood cell and ending with the clump of pigment.

In order to obtain a clear idea of the distribution of the blood, about which there is dispute, bits of bone were carefully decalcified and sections made from this.

In the yellow or fat marrow there were found widely scattered vessels lying between the fat cells, which were closely pressed together. As a rule the pure fat marrow only fills a part of the cavity of the long bones, and alternates with that of which the color is paler or a more diffused red. This color is found to depend either upon a simple hyperæmia or a partial infiltration with round cells. The walls of the vessels are seen as five dark lines. These are capable of very little resistance, as is shown by the extravasation of blood, which are frequently found penetrating for some distance between the somewhat atrophied fat cells.

In the lymphoid marrow the fat is reduced to a small number of widely separated droplets. But as a support for the otherwise loosely adherent cells, there is a network of star-shaped anastomosing connective tissue corpuscles. A similar plexus of dilated capillary veins is again noticed, and close to these extensive extravasations of blood. In extreme anæmic conditions the lymphoid marrow consists almost entirely of an intimate mixture of medullary cells and red-blood corpuscles. The thin-walled veins can no longer be recognized.

In diseases which are associated with a marked decrease of fat tissue, that is, cancer and tuberculosis, that in the long bones also disappears. The space thus left is not filled with round cells and blood so as to form a lymphoid marrow, but is replaced by a light yellow, transparent, more or less firm, gelatinous mass. In extreme cases this does not occupy all the space, and the small round fat cells with their nuclei, surrounded by a layer of protoplasm look as if lying in an excavation of the matrix. In the spongy bones this form is rarely seen, the lymphoid cell elements completely covering it up.

In the investigations of the author on the conditions of the marrow in disease, he has paid especial attention to that of the long bones, and to the occurrence of the nucleated red corpuscles and pigmented cells in the spongy bones. The importance of this is clearly manifest, since that of the hollow bones often changes into an embryonic state similar to that of the spongy bones, which are regarded as the source of blood formation. The above-mentioned cells are to be regarded as an expression of regeneration and destruction of the red-blood cells.

If it is really so that the red corpuscles are formed in the bone marrow, then those diseases in which we would expect a characteristic change here, are those associated with anæmia and in which the number of corpuscles has been greatly reduced. Yet in these diseases the hollow bones are found filled with red marrow. In such cases the entire volume of this marrow is increased and all the conditions are present for an increased production of red corpuscles. This increase, therefore, of red marrow must be regarded as a secondary compensatory change, called into existence by the anæmia. And this last can only be explained by an increased destruction of red cells somewhere in the organism.

This assumption is greatly strengthened when the conditions found in pernicious anæmia are taken into account. The chief symptom of this is a marked diminution of the red-blood corpuscles and the development of a lymphoid marrow in the long bones as a rule (82 per cent. of all cases). The nucleated cells present are fewer in number than in normal individuals, but their number is, however, much larger than in most diseases.

The fact that these are occasionally wanting seems at first sight to go against the idea, that places the regenerative power in the medulla of the bones. But when it is remembered that in cases of acute anæmia from loss of blood, they are always present and often in large numbers, their occasional absence in chronic anæmia should have little weight. For in the latter case the individual has been pulled down, and the activity of the cells in general is very much reduced.

In pernicious anæmia there are found great variations in the intensity of color, size and shape of the nucleated cells, and the non-nucleated corpuscles follow very closely upon them, thus pointing to their origin.

Another peculiarity of pernicious anæmia is the frequent occurrence of large cells containing blood and pigment. Surprising as it may seem, it must nevertheless be conceived that a destruction of red cells takes place in the marrow, and may assume such proportions as to equal the regenerative process. This he also regards as a secondary phenomenon dependent upon the exceptional conditions of circulation. The bed of the blood stream is extremely widened, and the current in consequence very much slowed. If, as often happens, extravasations take place, then further difficulties must be thrown in the way, and a true stasis result. As takes place in the other parts of the body, the white cells come in to aid in carrying off this blood, and in this manner the large cells above mentioned are brought into existence.

He closes his paper with an account of his investigations on various animals for the purpose of establishing the presence of intermediate forms. This was chiefly done by rendering the subjects anæmic and then killing them after varying periods. As a whole his results are not conclusive, although they tend to show the presence of such forms.

In union with other observers he found that the spleen became markedly atrophied, but it did not contain red-blood corpuscles more or less deeply furrowed such as were found in the normal spleen. These peculiar bodies he regards as representing a form of degeneration. This, it appears, is interrupted as the individual becomes anæmic, for the organism has immediate need of the entire quantity of hæmoglobine over which it has control to supply the loss from the hæmorrhages. So this atrophy of the spleen must be regarded as a sort of inactive period.

Accompanying the article is an excellent list of the literature pertaining to the subject, and the different forms of cells described are well illustrated in the plates.

ANATOMICAL INVESTIGATION AS TO THE ORIGIN OF VESICULAR EMPHYSEMA OF THE LUNGS.

Two different theories have been advanced about the process lying at the bottom of this. The one takes a purely mechanical activity as point of departure, while the other presupposes a vital, nutritive disturbance. In the first an increased pressure is the

main point, whether it is referred to inspiration or expiration. About the nutritive disturbances there is greater difference of opinion. Some regard it as a modification of the blood current, others as a chronic inflammatory process with subsequent fatty degeneration. A third party blame the nerves leading to the lungs, and speak of a trophic neurosis. While yet others think that the disease begins with a primary destruction and thrombosis of the capillaries.

Klasi [2] has made a careful analysis of the different opinions controlled by observations and experiments of his own.

Before summing up the results of his own work he recalls a few of the histological points which seem to have a special bearing.

The alveoli are covered with a continuous layer of epithelium which presents itself in two forms: (1) Large non-nucleated scales, without protoplasm, and (2) small cells containing protoplasm. (Interpolated cells.) All the authorities agree in saying that the nuclei of the cells lie in the meshes of the capillary network, varying in number from one to three. It remains now to be settled whether these cells are confined to the meshes or whether they spread over the vessels with a scale-like expansion. From his studies the author is inclined to the first view.

What are the peculiarities of the epithelium and what are its functions? As to this, his observations support the view of Arnold, who considers that it is of marked thickness, and that it furthermore has elastic properties. This is rendered almost certain when the displacement to which the capillary net is subjected during respiration is considered.

About its functions very little is positively known. The supposition is that it serves as a support to the capillaries, and also aids in regulating the amount of fluid.

The basement membrane is found as a thin, quite homogeneous membrane, provided with scattered nuclei and in which the elastic network of fibres with their branchings are imbedded. Finally, Arnold has made us acquainted with a well-developed lymph system with more or less complete gland-like accumulations. He has further shown how this envelopes the finest arteries and bronchioles like a sheath, and from there sends prolongations between the septa, and are even to be found isolated within them.

The first stage of emphysema shows itself in an increase in the size of the vascular meshes and a heightened activity of the epithelium. This latter is explained as reaction to an irritation, which must be regarded as the excessive expansion. This persistent and continually increasing pressure soon brings about the opposite effect. The epithelial cells are torn through the cement which unites them to each other as well as from the capillaries. This loosening and separation soon leads to a degeneration of the cells, from disturbance of nutrition or of the amount of water contained in them. They are then reduced to a thin lamella, which are capable of very little resistance, especially in the alveolar septa where the defect is first noticed. This disappears by absorption or degeneration, and the finest elastic fibres lying in it either disappear or retract and surround the opening. The larger this is, the thicker will be the surrounding layer of fibres, which can have originated by being pressed one against the other. Where there is abundant connective tissue as between neighboring infundibula, there is also a defect to be expected. This destruction of the epithelium leads at the same time to a loss of the capillaries. They have lost their support. They are exposed in consequence to increased pressure, to greater stretching and pulling, since they are only attached to a thin membrane. By this, their lumen is reduced to a minimum. Finally, this thread, which for a long time has not allowed any formed elements to pass, is broken. The walls collapse, degenerate and disappear. Numerous injected preparations illustrated this finely.

The elastic tissue possesses the characteristics which can increase the process started by the epithelium. The author believes less in a real atrophy of this very resistant tissue than in a pushing aside of it and a displacement of its fibres, which can simulate an atrophy. The connective tissue nuclei which have been mentioned by some as evidences of inflammation he regards as simply lymph cells.

In these observations he differs from the previous observers who thought they saw the commencement of the process in a primary disappearance of the intra-capillary elastic network, rather than in the degeneration of the epithelium with rarefaction of the capillary loops.

As to the etiology, he is inclined to the purely mechanical explanation of increased pressure. Without, however, denying that other diseases may have an influence in weakening the lungs, he regards a nutritive disturbance alone as insufficient..

[2] Virchow's Archiv., Vol. 104, p. 338.

INVESTIGATIONS ON THE TERMINATIONS OF THE MOTOR NERVES IN THE VOLUNTARY MUSCLES.

Miura [3] has made observations on the anatomical changes after the use of curare, which is well known to cause a paralysis of the nerve-endings on the muscles. For his experiments he employed frogs and lizards during their torpid condition in winter. In this state the failure of the respiration, which ordinarily makes long observation impossible, is not noticed. Thus he could keep the animals alive for from twenty to fifty days after poisoning. By the aid of control observations he found that the nervous plexus of the terminal plates appeared extremely thinned, atrophied. It colored weakly, so that in many places it seemed as if broken through. The so-called granular substance was much reduced, and in like manner was only feebly colored. The basement nuclei as well as those of the muscles were neither increased nor diminished.

This he regards as of the nature of a simple atrophy, and not a degeneration, as has been described. The heart, in spite of the great doses of curare, continued to work uninterruptedly, while the muscles of the body were completely paralyzed.

[3] Virchow's Archiv., Vol. 105, p. 129.

ON THE NATURE OF THE SO-CALLED HYPERTROPHY OF THE PROSTATE.

Thompson [4] from his own observations post-mortem divides the enlarged prostate found in elderly people into four groups.

(1) An increase of the glandular tissue and stroma in the relations corresponding to the normal. True hypertrophy. This is comparatively rare and causes no especial increase in size of the organ, which can present abundant secretion and large concretions.

[4] British Medical Journal, 1886, p. 1156.

(2) A new formation composed almost entirely of connective tissue with a tendency of the gland tissue proper to rarefaction. This gives the fibrous hyperplasia, or where the smooth muscular fibres do not remain behind in their increase, the fibro-muscular hypertrophy. This is the ordinary form, which has great increase in volume, but little secretion and formation of concretions.

(3) Great increase of the glandular part over the hypertrophy of the stroma. Abundant secretion and concretions are characteristic of this rare "glandular hyperplasin."

(4) Increase of the gland tissue and stroma in proportions corresponding to the normal, but with the production of circumscribed tumors. This well-known "local hypertrophy" can be established in a normal as well as any kind of hypertrophied prostate.

ADENOMA OF THE PLACENTA.

Klotz[5] describes a disease which seems to lead to abortion, with retention of the placenta, and consists in new formations of the character of adenoma.

Microscopic examination was made in five cases of retention after abortion, and in three the peculiar formation was found. The point of departure appears to be in the glandular layer (stratum spongiosum) of the decidua serotina. The earliest change is found to consist in the transformation of a portion of its connective tissue into a gelatinous mass of protoplasm, of an embryonic form, and of its glandular epithelium into a stratified layer. This last is composed of elongated flat cells, which are to be distinguished from the decidual cells of the same general shape by their greater length, and by the smallness of their nuclei.

As soon as the epithelium commences to form, there is produced a great number of nuclei. If a double staining has been used, they take the blue color of the hæmatoxylin, while those of the decidual cells retain the carmine color.

The mass of tissue thus run together grows in the form of buds, villi, or knobbed projections. Further growth and repetition give rise to trunks with branching shoots. These twist into each other, on account of the restricted space, forming ball-like masses, and thus the nodules of adenoma are produced.

In one case there was a recurrence in six months after removal, which presented the same histological structure. Repeated removal and cauterization with nitric acid resulted in healing.

The author believes that the adenoma is formed before the expulsion of the fœtus, and that it is the cause of its death and abortion, and he further thinks that the retention is due to this also.

TUBERCULOSIS OF THE TENDON-SHEATH.

Berger[6] gives a clear description of this rare affection, founded on four cases. He distinguishes between the acute and chronic form, and in both separates the purulent from the non-purulent. Of the first, up to the present time there has been no observation, and it can only occur now and then, as the accompaniment of general acute miliary infection.

The chronic disease is either quite diffuse, or else circumscribed. In the former, there appears a swelling throughout the entire extent of the sheath. This increases very slowly, and only causes destruction when it has attained considerable size. The tumor is a soft, sarcomatous-looking mass, surrounded by a sort of capsule, and entirely filling the lumen. On microscopic examination, the characteristics of tuberculosis are to be made out.

The latter form, the seat of which is preferably near the end of the sheath, presents circumscribed nodules, up to the size of a walnut.

In both kinds the subsequent course is the same. A destruction of the capsule and the skin comes on. The fungous masses spread more widely, and can finally suppurate. The general condition becomes worse and worse.

Much more frequent it is a secondary tuberculosis, which may follow a primary form elsewhere (usually of the bone). The sheaths of the tendons of the fingers are affected preferably with the primary form, while those of the peronei and the extensors of the foot are most frequently the seat of the secondary affection. The treatment has to be guided by the form of the disease. In two cases in which the common carpal sheath of the flexors was involved, amputation had to be resorted to. In the other cases, extirpation of the tumors was sufficient.

TUBERCULOSIS OF THE MUCOUS MEMBRANE OF THE MOUTH.

Within a few years, cases of this peculiar affection have been reported, and Hansemann[7] has taken up the subject, in view of the importance of the diagnosis. This is often of great difficulty, and cannot be made by mere inspection, and is easily confounded with cancer or syphilis. None of the symptoms of pain or redness can be relied upon, or the appearance of tubercles at the base of the ulcer to differentiate it from lues, and even the fact of healing under internal treatment is not positive, as tuberculous ulcerations at times heal spontaneously. The previous history and the manifestations in other organs must naturally be important factors.

Still more difficult, is the diagnosis between it and cancer. Age and so-called cacexia are not to be relied upon. Cancer is said to be single, tuberculosis multiple, but cases of the author show that this is not without exception. The quickness of growth, the examination of the bottom of the ulcer, and the possibility of squeezing out epithelial plugs may be indications, if they are present; also the presence of bacilli in the secretion, but this is very doubtful. An absolute diagnosis can only be made by a microscopic examination of a portion of the growth that has been excised.

In the colored preparation, the tubercles can be detected with the unaided eye as small, round spots more deeply stained. These lay usually beneath the mucosa, at times within it. Where the membrane was entirely infiltrated or destroyed, granules were often seen in the subcutaneous tissue, and even within the muscular substance. They differ but little from each other, and all show the characteristic structure of miliary tubercles. They consist almost entirely of lymphoid cells, between which are a few epithelial cells; in the centre, is very apt to be found a giant-cell. In places they are confluent. Cheesy degeneration is rarely present, and in but small amount. Bacilli were found, but, as would be expected, but very sparingly. These lay unmistakably in the giant-cells,

[5] Archiv. f. Gynæcol., Vol. 28, p. 1. Ref. in Fortschritte der Medecin, Vol. 4, p. 564.

[6] Berger. Deutsche Zeitschrift, f. Chirurgie, Vol. XXI, p. 3

[7] Virchow's Archiv., Vol. 103, p. 264.

and were also found in the midst of the tissue where there were no characteristic tubercles.

From his observations, he concludes that the affection is not so seldom as is generally supposed; secondly, that a positive and early diagnosis can only be made by means of the microscope.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

C. M. GREEN, M.D., SECRETARY *pro tempore*.

OCTOBER 25th, 1886. The President, DR. F. W. DRAPER, in the chair.

DR. H. H. A. BEACH reported the following cases and exhibited the specimens:

STONE IN THE BLADDER: LITHOTOMY.

Patient, a boy of fourteen. He had passed gravel at intervals for four years and complained of pain in the perineum and the glans penis whenever he passed water. This was most easily accomplished upon his hands and knees. There had been no blood voided with the urine. Micturition frequent.

The stone was removed through the usual lateral incision, and weighs 660 grains. Its longest circumference five inches, its shortest four inches.

With the exception of a small abscess in the scrotum, the wound healed without interruption, and he was discharged well at the end of five weeks.

STONE IN THE BLADDER: LITHOLOPAXY.

Patient, a man sixty-eight years old. Symptoms had existed about three years; during the past three months has had almost constant pain in the perineum, extending through to both hips, down the thighs and in the glans penis. Blood has been passed with the urine throughout the time. Stone crushed and removed.

It proved to be phosphatic and to weigh sixty-four grains. Complete relief followed its removal and the man left the hospital well seventeen days after.

DR. BEACH also reported the following case of

TUMOR OF THE BREAST.

Patient, a woman fifty-five years old. The growth first made its appearance when she was twenty years old. It was small (about the size of a hickory nut). It increased some until she was thirty years old, when she gave birth to a child. This was followed by an "abscess of the breast," when the tumor disappeared. Three years later another growth made its appearance which has grown periodically ever since. It was removed by lateral incision and weighed eight pounds.

DR. FITZ described the appearance of the specimen as follows: the tumor formed an elongated, rounded, lobulated mass, as large as a child's head and weighing eight pounds. It was easily isolated from the subjacent tissue but was closely adherent to the skin. Although dense in the main, several of the projecting lobules were soft and fluctuating.

On section the part nearer the nipple was chiefly composed of a dense, grayish-white, slightly translucent tissue, traversed by numerous fibres. The more remote portions of the growth consisted of lobules of gelatinous material, in places scarcely firmer than thick mucus, which its appearance closely resembled.

Here and there, throughout the cut surface, were irregular cavities, either rounded or slit-like, in which was a thin, watery, or a thick, slimy fluid. The walls of these cavities were lined with a short cylindrical epithelium, and frequently formed large and small polypoid and lobulated masses which projected into the cavity.

On microscopic examination the structure of the tumor was found to be composed of abundant large cells, stellate, fusiform and round, the former anastomosing. These cells were separated from each other by a homogeneous, colorless substance giving with acetic acid the reaction of mucine. Delicate fibres traversed the intercellular substance and were the more numerous in the opaquer portions of the tumor. The bloodvessels were few, for the most part small, and thin-walled. Papilliform growths, covered with cylindrical epithelium, were seen to project into small cavities, analogous to the condition to be observed with the naked eye. The tumor was of the variety to which Virchow has applied the term intracanalicular myxoma. Billroth prefers to retain the old name, cysto-sarcoma, although recognizing that its structure may be composed of other than sarcomatous tissue and that its clinical features may widely differ from those characteristic of the sarcoma.

STONE IN A FEMALE BLADDER.

DR. ELLIOT showed the fragments of a stone which he had removed by Dr. Bigelow's operation. The patient was a woman who had been hysterical for several years, and at times had had hystero-epileptic fits. She had suffered from a severe cystitis for four months and had frequently catheterized herself. At the operation the stone proved to be very soft. Among the fragments there appeared bits of paper. On passing the little finger into the bladder several jagged fragments were touched which felt like pieces of mortar; these proved to be bits of paper incrusted with lime salts. The paper clogged the lithotrite and the evacuator, so that the operation was tedious. The lithotrite worked best when used perpendicular to the patient, for in that position the part of the bladder over the anterior vaginal wall was depressed and made a convenient pocket for the fragments in front of the uterus.

The paper had undoubtedly been introduced by the patient and had served as a nucleus for the stone.

DR. WHEELER had seen a case about a year ago, in which a coil of hair constituted the nucleus of the stone. The patient had used injections very frequently for a long time, supposing his trouble to be simply cystitis. Dr. Wheeler also spoke of a specimen in his possession some years ago, a calculus removed from a young girl, in which a hair-pin was the nucleus, the stone weighing nearly two ounces. It seems that she used the hair-pin to help herself pass urine and lost it in the bladder: some twelve years afterwards the stone was discovered.

DR. J. W. ELLIOT reported

THREE CASES OF SUPPURATING OVARIAN CYSTS TREATED BY DRAINAGE.[1]

DR. WHEELER said: I think it is the experience of all who have much to do with suppurating cysts that

[1] See page 441.

the worst thing about them is the difficulty which one encounters with adhesions. Within thirty years I have seen four cases of suppurating ovarian cysts: in three of them the adhesions were not very marked. They were slight in one, and in the other two little or none. The cysts were removed, and the patients recovered. One other case I saw twenty-five years ago, of a gentleman in a neighboring city, who had a patient in that condition. I opened and evacuated the cyst, but closed the abdomen and gave up the patient on account of the extensive adhesions. This operation of course failed, and the patient was in a critical condition; but after a period of three or four months the patient insisted upon another attempt to remove the cyst. At the second attempt I again found it impossible to remove it, and found also that the cyst was suppurating. I evacuated the pus and closed up the cyst, and the patient died in three or four days. No attempt at drainage was made then; it was before the days of the drainage-tube; hence the fatal result. I think from my own observations that a suppurating cyst should be always treated with drainage; the worst difficulty to encounter is that of adhesions. If there are no adhesions, and the cyst, whether suppurating or not, can be gotten out of the cavity, it is very easy to get a favorable result under the present mode of operation.

Dr. F. H. Davenport said in these cases it seemed as though there could hardly be too much interference; that is, the moment bad symptoms appeared, that was as a rule a direct indication for some active interference. In the first and third cases reported, when the convalescence was disturbed by fever, chills and other bad symptoms, the trouble was found to be the suppuration of secondary cysts, the walls of which had not been broken down at the first operation. Dr. Davenport believed it to be a very important rule to thoroughly break up all such secondary cyst-walls and make the abscess one large cavity at the first operation. By so doing, one element of tediousness can be avoided.

When we consider that this class of cases as a rule is marked by their slow recovery, the sinuses often taking years to heal up, Dr. Elliot's success in these three cases is very encouraging. It is undoubtedly due to the close watching, and immediate interfering at the first bad symptoms.

Dr. J. C. Warren said: It seems to me that these cases are illustrations of the surgical principle which consists in giving free drainage to abscess cavities. I mean by free drainage, such drainage as will not permit the stagnation of pus. If we have such an arrangement of tubes that we always have a flow and no stagnation, then we have conditions favorable to the process of repair. In these cases, it seems to me that it is of primary importance in treatment to drain not only through the abdominal wall, but also some dependent part. These cases are very interesting to the general surgeon as well as to the specialist, and illustrate that the general law of free drainage pertains to the abdominal cavity as well as to the other parts of the body.

Dr. M. H. Richardson asked if Dr. Elliot had ever met with any difficulty in draining through the vagina, and was answered in the negative. Dr. Richardson said that he had aspirated two cases of pelvic abscess situated in the vicinity of the right ovary, and in both cases the needle had first perforated the bladder. The bladder was not emptied in the first case, and it was thought that for this reason a deverticulum of its distended base intervened between the tumor and the vagina.

In the second case this was borne in mind, and not only was the bladder emptied as much as possible, but a sound was introduced to indicate its exact position with reference to the tumor. Yet the same thing happened, and urine flowed from the needle on slowly withdrawing it from the evacuated pus cavity. In both cases it was intended to make a free incision along the needle. In both, some difficulty presented itself so that the needle was withdrawn in time to discover where it had perforated.

The interesting point in these cases is the unusual and abnormal position of the bladder, which might be present in any case, and therefore might be freely incised.

This accident can be avoided in every case by passing the needle slowly through the parts with the vacuum applied. If it enters the bladder at any time the flow of urine will warn us not to make an incision.

In the cases referred to no bad results followed, though the needle used was large. Another case was mentioned which showed the advantage of drainage through the vagina in pelvic abscess cavities, even when already freely opened through the anterior abdominal wall.

The patient, a young woman, had had severe pelvic inflammation resulting from three abortions, which had resulted in an abscess behind and to the left of the bladder and uterus, and had formed beside an intestinal fistula.

An operation was done by Dr. Richardson for closure of the intestine by suture, and drainage of the abscess cavity. The intestine was found already closed of itself. The abscess cavity drained through the vagina. In this case there was no difficulty found in avoiding the bladder because one finger could be put into the vagina and the other at the bottom of the abscess, while an assistant held a sound in the bladder. A remarkable improvement began in the patient's local and constitutional symptoms, and she is now about well.

Dr. Fifield said: The bladder takes wonderful positions: one can hardly tell where it may not be found. Many years ago, in a Parisian hospital, a man was brought in with strangulated hernia. The attending surgeon proceeded to operate, and in doing so cut into an elongated body lying in a sac behind where the intestine had lain: a spurt of fluid followed, which proved to be urine. It is the first and only time that I ever saw the bladder in that situation, and it would seem to be capable of taking very strange positions.

Dr. Fifield then reported the following

UNIQUE CASE OF DISLOCATION OF THE RIBS.

A boy about eight years old, standing near a peddler's wagon, was thrown down by some children underneath the hind wheels of the wagon, the horse started forward, and the wagon wheel went over the child's chest, over the left chest in front. Perhaps half an hour after this, I saw him. There was then a dislocation of some three of the ribs, I don't remember the exact ribs, near the region of the heart; a dislocation forwards, the cartilages of the ribs lying behind, the ribs projecting in front. The child was described as having been very blue, livid, and gasping for breath

shortly after the accident. When I saw him he was breathing with considerable ease, but upon any attempt being made to push the ribs backward into their places, he again grew livid, and respiration threatening to cease, I was obliged to desist from my endeavors. I think I tried twice in this way and on each occasion the interference of respiration made me let him alone.

There was obviously no way of placing the cartilages in any position, except by cutting a hole, and putting the hand in. I advised to have him left entirely alone, hoping that this would restore the position. The following day the projection of the ribs was not so noticeable and within three days the projection had almost entirely disappeared, and the cartilages had resumed very nearly their natural place. Upon consulting all the works of surgery in my library, I could find no allusion to this accident, except in one of the volumes of external pathology by Barnes, and some person associated with him. In that work it speaks of the dislocation of the ribs forward, the cartilages being placed behind. It states that there is no well authenticated case on record. But one case is cited, and it is cited with expressions of disbelief in the occurrence of the accident, and the narrator is thought either to have drawn upon his fancy or that the case was so ill-observed that it was unworthy of any notice. I certainly have not ever seen it in the best works of English surgery. I find not the slightest allusion to any such accident.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

CHARLES P. STRONG, M.D., SECRETARY.

MEETING October 4th, 1886. DR. INGALLS in the chair.

DR. F. S. WATSON showed a patient upon whom he had performed an internal urethrotomy three years previous to date, and said: I wish to show this patient on two accounts, first because he is an extreme example of gonorrhœal rheumatism, and secondly because he shows a good result of the operation of internal urethrotomy by Otis's method. The history of the case, of the operation and its result is briefly as follows: J. O. B., aged forty-nine, came to the Clinic for genito-urinary diseases at the Boston Dispensary in June, 1883. Thirty years previous to this time he had had his first attack of gonorrhœa, and between that time and the present frequent attacks had occurred, each new "case" following fresh venereal exposure had been accompanied by a severe form of arthritis; the first points involved were the toes, then the ankles, knees, wrists, elbows, shoulders, and finally the dorsal vertebræ; no actual anchylosis had occurred except in the great toe of the left foot. One attack of rheumatism had been sufficiently severe to keep him confined to bed for five months.

The last gonorrhœal affection occurred ten months since.

The urethral symptoms were: a gradual narrowing of the stream of urine for a year past, gleet, frequency of micturition, fifteen times during the day, four times during the night, a good deal of pain and scalding attended the act. There was dribbling after its completion.

The normal calibre of the urethra was 30 (French), meatus 27, at 3 inches from the meatus a stricture well formed, of one-half inch in length, and of a calibre of 23 (French).

The urine is normal except for the presence of a small quantity of blood and pus, and some mucous shreds.

He was sent to the Carney Hospital, kept in bed for two days, on a preparatory treatment of potass. citrat. and quinine.

The stricture was then divided to 31 (French), with an Otis's urethratome, and a No. 31 (French) steel sound passed into the bladder. Neither hæmorrhage nor rise of temperature nor any untoward symptom followed the operation. The frequent micturition disappeared in two or three days, and on the fourth day the patient left the hospital greatly relieved. Soluble iodoform bougies were inserted into the urethra for the first three days following the operation, and quinine was given for the same period.

On the second, fourth, sixth day, and every second day for two weeks a No. 31 (French) steel sound was passed.

The patient then went away and was lost sight of for three years; to-day he again presented himself, stating that he had been greatly improved in health in all respects until three months ago, when without venereal exposure, he had another attack of rheumatism, which was very severe, and greatly exhausted him. But that he had never had any return of his urinary symptoms, and considered himself well in that respect. I examined the urethra, and found that a No. 29 (French) sound passed readily into the bladder, and that *no* recontraction had occurred at the former seat of stricture. The meatus had recontracted one number. He has never had an instrument of any kind passed into the urethra, nor has he received any other treatment directed to it since the time that he ceased to be treated by me three years ago.

It is because of the absence of recontraction of the well organized stricture, after its thorough division by the knife. That is, to the permanence of results of a properly performed cutting operation, that I show this patient. Three years ago, Dr. G. H. Tilden and I published the immediate results of this operation in about twenty cases in which he had performed it. Time enough had not then elapsed since the dates of the operations to authorize us to speak from our own experience of the lasting results of the operations. Some of these cases have since reported to us. Of my own cases, three beside the present one, I have seen from time to time, and in these three there has been no recontraction whatever; gleet has ceased, and the patients consider themselves cured. Two other upon whom I operated have proved failures, having recontracted. Of the remainder I know nothing. It is very possible that the failures may have been due to a lack of experience of the operation, they having been among the earlier one. The sum total of my experience to-day enables me to say only, that I believe that in a small majority of strictures anterior to the bulbous urethra, of wide calibre (14 French) and upward, yield results lasting, at any rate, several years without subsequent use of instruments, and perhaps permanent, while the minority will prove failures in the sense that they will recontract, and require repetition of the operation, or subsequent dilatation, at stated intervals.

DR. LANGMAID said that he considered the term gonorrhœal rheumatism in many instances a misnomer,

as he was sure in a large percentage of these cases the processes were reversed, the gonorrhœa being a symptom of the rheumatism, not a cause.

Dr. Watson replied that he could not consider the criticism as applicable in the present case as there was never an attack of rheumatism without fresh infection, and every new gonorrhœal infection produced anew the rheumatism.

Dr. Porter inquired as to the changes that had occurred in the urinary symptoms.

Dr. Watson replied that there was no complaint of any disturbance whatever in the genito-urinary tract.

Dr. Cabot stated that the treatment by gradual dilitation showed also a good percentage of permanent cures in the same class of cases as did the cutting operation, that is, when the stricture was of large calibre. In his opinion the important factor in effecting the cure was securing full dilatation of the contracted urethra, irrespective of the means by which this was accomplished, and retaining this full dilatation until the tendency to contract had disappeared.

Dr. Porter stated that divulsion produced permanent cures frequently, even without subsequent passage of the sound.

Dr. M. F. Gavin reported

A CASE OF SUPRA-PUBIC LITHOTOMY.[1]

Dr. Cabot reported a case of

SUPRA-PUBIC LITHOTOMY,[2]

in a patient with a large stone and false passages about the urethra.

He considered it important in this operation to fill the bladder before distending the rectal bag, and showed by drawings from frozen sections, how great an effect the combined distension of bladder and rectum, have in raising the prevesical fold of peritoneum and in so steadying the bladder as to make the incision into it a comparatively simple matter.

He thought that when it was especially desirable to raise the vesical floor, as in cases of tumor, it was best to use a short, pear-shaped colpeurynter which would lie in the lower part of the rectum and press upwards from there, rather than a long sausage-shaped bag which, reaching up behind the bladder would press it forward and would not lift it so much out of the pelvis.

Dr. Watson said that this operation had within a very short time been revived, and from the improvement in technique was destined to take a prominent rank in the operations for stone. In the old operation there were two dangers, septic phlegmon and opening of the peritoneum. These are now overcome by drainage and antiseptics. In the operation as performed to-day, trouble is apt to arise from two other causes, namely: pushing down in front of the bladder with the finger under the pubic bones, and an improper method of dividing the pre-vesical fat which should be cleanly cut through with the least possible disturbance, as any traction exerted upon it will disturb very decidedly the peri-vesical tissues and decrease the chances of good union in the wound.

Dr. Porter said that he wished to direct attention to a point not mentioned previously, that is, the applicability of this operation in cases of tumor of the bladder. Its usefulness was perhaps even greater here than in cases of stone. Compared with operations by other methods he had found it affording greater facility for examining and removing the tumors and devoid of many dangers. He favored injecting the bladder first as giving more perfect control of its position and exhibited diagrams illustrative of this point. Drainage in these cases was sufficiently secured by a soft-catheter after the first three days, as there was no escape of urine through the upper wound a few hours after the removal of the tubes. The operation has been done many times without dilatation of either rectumor bladder. Dittle, of Vienna, constantly operates in this way and has devised special instruments, the important one being a pair of retractors and a knife grooved to enter the bladder upon a guide. The speaker favored the use of broad and firm spatulæ and the small electric light for illuminating the vesical cavity.

Dr. Gavin stated that the question of the best method of drainage was still under consideration. Sir Henry Thompson in his series of eight cases employed drainage-tubes in the wound in four cases, and in the secondary four omitted them. All did equally well.

Dr. Blodgett said that he hoped to hear more in detail the description of methods for securing drainage after the operation of opening the bladder from the abdominal surface. It would seem that perfect drainage might have more to do with the success of the operative procedure when the viscus is opened, than in ordinary and less serious operations.

Dr. Blodgett spoke of a method of securing constant drainage of the bladder which he had seen carried out in Guy's Hospital, in a case operated upon by Mr. Howes, of London.

The patient was a small boy, who was suffering from retention, and in which it was not easy to pass a catheter, or in any ordinary way to relieve the vesical distention. The bladder was opened by the suprapubic method, and a soft catheter was subsequently passed into the cavity of the organ through the wound and gently pushed along the floor of the bladder, until the point entered the urethra. The point of the instrument was felt beneath the perinæum, and by a simple incision was exposed, and the end brought out through the second wound; thus establishing a channel for continuous and complete drainage of urine, as well as for the evacuation of any other products which might collect in or about the bladder. The abdominal wound healed rapidly, without complication. The condition of the child was good throughout, and Mr. Howes was quite satisfied with the method as a means of drainage of the bladder in cases in which for any reason this is to be desired. One point which seemed to be a feature in its favor lies in the fact that by this method the bladder is drained from its most dependent part, from the base, through the perineal floor, without wounding the prostate, or opening the deeper parts of the floor of the pelvis, thus avoiding some of the recognized perils attending any operation upon the bladder from this direction.

Dr. Langmaid read a paper on

FALLICULAR TONSILLITIS.[3]

Dr. Leland said that in those cases where the douche was contraindicated, its employment was not attended by the dangers met with where, according to the readers' views, its use was indicated, because in

[1] See page 446 of this number of the Journal.
[2] See page 447 of this number of the Journal.
[3] Publication reserved.

the former cases the eustachian tubes were closed, but in the latter, in consequence of atrophy, they were patent and fluid could easily enter; thence he never employed the nasal douche.

DR. LANGMAID said he referred to extreme cases where the fetor was great. In the majority of cases of disease of middle ear induced by the douche there was associated stenosis of the nostril.

DR. DE BLOIS said that in many cases the vault of the pharynx alone was affected, and for the treatment of these he preferred the syringe to the spray, for the uvula will get in the way of the latter and too much force is required to clean away the secretion. He teaches the patient to use the syringe, and never the so-called nasal douche. His experience has been that the large follicles are rarely cured.

ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL BENEVOLENT SOCIETY.

THE Annual Meeting of the Council of the above Society was held at four o'clock in the afternoon of Thursday, October 29th, in the Harvard Medical College on Boylston Street, Boston. A number of new members were elected to the Society, and the usual routine of business was transacted.

At the annual meeting of the Society held at half-past four o'clock of the same afternoon and at the same place the following officers were elected for the ensuing year: *President*, Henry W. Williams, M.D.; *Vice-President*, Richard M. Hodges, M.D.; *Treasurer*, Francis Minot, M.D.; *Secretary*, Robert Amory, M. D.; *Trustees*, Joseph Sargent, W. L. Richardson, F. C. Shattuck, B. S. Shaw, James Ayer, B. E. Cotting, William Mack, J. O. Green, Augustine Shurtleff.

The treasurer reported that he had distributed about fourteen hundred dollars to thirteen beneficiaries who were eligible under the rules of the Society. The invested property of the Society amounts to about $22,000 in current value, but under the restrictions in the methods of investment the accruing income is small.

The object of this Society is to aid members of the medical profession, crippled by age or disease, and their families when in need.

The admission fee to new members of the Society is fixed at three dollars, and the assessment for each subsequent year is two dollars, payable at or before the annual meeting. The payment of twenty-five dollars constitutes a membership for life. The payment of fifty dollars or more at one time entitles the donor to be inscribed as a benefactor of the Society. Any member who shall become a benefactor of the Society, or the widow of any such member shall be entitled to receive the interest of the sum, thus given by him (but not the arrears of interest), as an annuity whenever, and as long as his circumstances shall be such as to lead him to claim said annuity.

No annuity shall be granted to any physician or his widow, if they shall be under sixty years of age, except under peculiar circumstances. But annuities once voted shall not be withdrawn, except on account of misconduct in the recipient, or because this assistance is no longer deemed necessary.

No permanent grant shall be made to any party except upon proof of good moral character, and if granted, it may at any time be withdrawn upon proof of intemperance, improvidence, or immorality; it being the intention of this Society to devote its funds to the relief of distress arising from misfortune and not from misconduct. No permanent grant shall be made to a disabled physician who has, if single, $250 a year, or if married, $300 a year to live upon.

The aid of this Society which was incorporated in 1857, shall be granted for the relief of those only who are or have been members of this Society, and their families; and of other members of the medical profession who are or have been inhabitants of the Commonwealth of Massachusetts, their widows and minor children.

Donations to the general fund of this Society have chiefly come from the members of the medical profession, but in some instances sums of money have been devised from the estate of individuals not directly connected with the medical profession. If some of the experiences of the aid which occasional small sums have rendered in many instances were more generally known, the needs of increasing the general fund and its income would most surely meet with favor among benevolent persons.

Recent Literature.

Puerperal Convalescence and the Diseases of the Puerperal Period, by JOSEPH KUCHER, M.D. 12mo, pp. 311. New York: J. H. Vail & Co. 1886.

This book is a valuable addition to obstetric literature. The author writes after four years service as assistant in the Second Obstetric Clinic of the Vienna Lying-in Hospital, with the additional experience of several years in private practice: the book may therefore be accepted as reflecting the teachings of the Vienna school.

Nearly half of the volume is devoted to the consideration of puerperal fever. The theory that this affection is an essential disease is very successfully combated, and the views of Semmelweis, who nearly forty years ago urged that puerperal fever always originated from infection by the absorption of septic material through lesions in the genital canal, receive the most complete elucidation and vindication that we have seen in the English language. The section on the treatment of puerperal fever is, though brief, especially valuable. We do not entirely agree with the author as to details, believing with Garrigues and Richardson in the use of the occlusive pad and the omission of the vaginal douche in the absence of definite indications. But methods of treatment may be safely left to individual opinion and experience if based on a correct understanding of the septic origin of the affection.

Other chapters are devoted to lactation and affections of the breasts and nipples; to albuminuria, eclampsia, phlegmasia alba dolens, mania, and other puerperal diseases. Practitioners will find these chapters of great practical value.

The style of the book is at times brusque and dogmatic; rather that of the advocate than of the calm man of science. Still, the importance of the subject and the apathy of many members of the profession in the proper understanding of the nature and prophylaxis of puerperal fever go far in excusing an incisive method of gaining attention. We congratulate the author on his work.

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THOMSEN'S DISEASE.

In a recent monograph Erb[1] has given us an exhaustive account of this curious affection, and has made great additions to our knowledge of the subject. He admits but twenty-three typical cases among those yet reported, two of which came under his own observation and have been previously reported,[2] and a third was reported by Fischer.[3] The disease is hereditary, affects members of the same family, and begins in infancy or as late as puberty. After any period of rest there is stiffness of the muscles and slowness of movement in any attempt at muscular contraction. After persistent effort the stiffness passes off. If the patient is asked to perform a movement he can do so promptly, but the contraction persists from five to thirty seconds, rendering it impossible for him to relax his muscles. These persistent contractions Erb terms myotonic disturbances of motion. There is great muscular hypertrophy, but the muscular strength is not equally increased. Erb noted "fascicular" contractions in the muscles, which he says are distinct from fibrillary contractions. In the case reported by Pitres and Dalledet[4] the facial muscles were affected, so that there was difficulty in speaking. Erb's researches into the mechanical and electrical excitability of nerves and muscles are of the greatest importance, however. In the motor nerves he finds the mechanical excitability somewhat diminished; the faradic excitability normal, though a sudden increase in the current may produce prolonged contraction, lasting four to ten seconds after the current has ceased; galvanic excitability normal, though a succession of shocks may caused prolonged contraction. In the muscles the mechanical excitability is increased, a touch with the finger being enough to excite tonic contraction lasting from five to thirty seconds. The faradic excitability is very marked, sudden increase causing prolonged contractions, but opening contractions are never lasting. Galvanic excitability is increased quantitatively (KaSZ and AnSZ with one-fourth to two milliampères). Qualitatively both poles may act alike, but the anode may be a little more marked. The muscular contractions are slow and tonic, and prolonged. The most characteristic sign is the occurrence of rhythmical wave-like contractions produced by stabile currents when one pole is placed on the muscle, best of all when placed upon its tendinous end. These contractions proceed from the kathode to the anode. For these wave-like contractions, which are typical, Erb proposes the name of myotonic reaction (MyR); the analogue of reaction of degeneration. He considers it typical of Thomsen's disease, and suggests that a tap of a percussion hammer, and a few kathodic closures will be enough to establish a diagnosis. Fischer obtained these reactions, about fifteen to twenty seconds apart, with a current of 15–20 milliampères. Eulenburg and Melchert,[5] in an interesting series of four cases in one family, find somewhat similar electrical changes, but fail to get the myotonic reaction. Erb removed a bit of muscle from one patient and found an enormous hypertrophy of the fibres. Cross-section of the fibres showed a rounded almost circular outline, instead of the normal polygonal shape. There was an increase of the interstitial tissue and of the nuclei of the sarcolemma. Fischer found the contour of the bundles uneven and tumefied, due possibly to excision. The transverse striation, too, was not well marked. In Fischer's case Erb found also vacuolization of the individual fibres. Erb is not yet willing to affirm or deny that the disease is a tropho-neurosis. Careful post-mortem examinations of the nervous system are still wanting.

[1] Die Thomsen'sche Krankheit (Myotonia Congenita) Studien. Leipsic, 1886.
[2] W. Erb. Klinisches and Pathologisch-Anatomisches von der Thomsen'schen Krankheit. Neurolog. Centralblatt, No. 13, 1885.
[3] O. Fischer. Ein Fall von Thomsen'schen Krankheit. Neurolog. Centralblatt, No. 4, 1886.
[4] A. Pitres and L. Dalledet. Une observation de maladie de Thomsen. Archives de Neurologie, September, 1885.
[5] Eulenburg and Melchert. Thomsen'schen Krankheit bei vier Geschwistern. Berlin kl. Wochenschrift. No. 38, 1885.

RECENT METHODS OF TREATING HÆMORRHOIDS.

Internal hæmorrhoids demand more frequent surgical interference than any other variety of this common affection. Situated completely within the rectum, between the external and internal sphincters,—rarely above the latter,—they may be divided into those which are soft, elastic, highly vascular, erectile, and easily engorged, and those in which the tumors, produced by the extravasation of blood into the adjacent tissue and its subsequent coagulation and fibrinisation, are hard and indurated. The powerful contraction of the sphincter muscles upon such tumors, provokes their protrusion: they often become strangulated, and great pain results if operative measures are not adopted. The dilatation of the anal sphincters, while affording great temporary relief and sometimes even more than this, by removing the cause of the strangulation, does not, however, cure the disease.

The modern and successful treatment of hæmorrhoids requires the adoption of measures which shall

accomplish their cure in a short time, with little or no pain, and ensure the patient against a return of his disease. Of the methods now in vogue for the radical cure, two, namely, the injection of certain agents — notably carbolic acid — and the use of the clamp and cautery are assuming great prominence.

The substances which have been, and still are, employed for the injection of internal hæmorrhoids contain,— as an essential ingredient of the solution introduced,— perchloride of iron, ergot, chloral, alcohol, or carbolic acid. The last named is, at present, generally chosen, and in its selection the object aimed at, and claimed to be most frequently obtained, is a solidification of the hæmorrhoidal tumor without attendant sloughing.

By the cautious use of carbolized injections, a cure can, unquestionably, be brought about, but a pile which has thus lost a portion of its vascular supply, though it may consequently become so small and indurated that it neither bleeds nor protrudes, is not as radically cured as one which has been actually and literally removed. The surgeon cannot be sure it will not return.

In the use of carbolic-acid injections, there is, unfortunately, no rule as to the strength or quantity which can be used with impunity in every case. A weak solution will produce a slough in one case, while a stronger solution used in another will not. As the amount of suffering, as well as the length of treatment, is dependent upon the occurrence or non-occurrence of this accident, which certainly is not infrequent, it must still be regarded as an open question whether the method by injection is the beneficial, safe, and certain remedy which it has been represented to be. "Each injection is a surgical operation, and may cause greater pain and longer confinement by its effect upon a single hæmorrhoid than the clamp and cautery will entail" (Kelsey) in effecting the radical destruction of half a dozen. It is practically impossible to form any opinion of the time necessary for a cure, or the amount of pain which the patient will have to endure.

The most satisfactory method yet devised for effecting a complete and radical cure of internal hæmorrhoids, and the one generally adopted, is by the clamp and cautery. It has none of the disadvantages arising from the method by injection. The pain is not greater, the constitutional disturbances are as slight, and the length of possible confinement is likely to be much less. The clamp and cautery do with certainty at a single operation that which it takes many injections to accomplish. When sloughing takes place as a sequence of the latter, a similar loss of tissue results as from the use of the clamp and cautery, and by a process not so rapid or exact in its limitations. It is a rule, in the use of the clamp, to apply it to the mass in a line radiating from the arms, and not to grasp too much at a time. By so doing, injury to the sphincter muscle is less liable to happen, and the danger of undue cicatricial contraction is diminished. By the injection method such details cannot be so accurately limited.

For these important reasons, if for no others, it would seem that the treatment of hæmorrhoids by injection has not yet reached a perfection which entitles it to implicit confidence. Simplicity of method — emphasized by the halo of special virtues once attributed to carbolic acid — and aided, probably, in some degree by mystery and charlatanry, promised more from its adoption than subsequent experience has justified.

THE TREATMENT OF CHOREA BY CIMICIFUGA.

ACCORDING to Stillé, Physick of Pennsylvania was the first to prescribe the black snake root in chorea. This was as early as 1821. Cimicifuga racemosa was again brought to the notice of the profession as a remedy for chorea, by Dr. Jesse Young, in the *American Journal of Medical Sciences*, September, 1832. Dr. Young prescribed the powdered root in teaspoonful doses three times a day. It was subsequently recommended by Lindsley, Kirkbride, and Eberle.

Stillé, who considers the utility of cimicifuga in chorea as unquestionable, in summing up his observations on the remedy, remarks that "the cases most adapted for its use are those in which the nervous derangement is independent of any definite disease in other parts of the body. It must be used in doses of sufficient strength to develop its specific effects, particularly vertigo and confusion of sight."

Dr. Hiram Corson, a veteran Pennsylvania physician, has again called attention in the *Medical and Surgical Reporter*, to the remedial virtues of cimicifuga in chorea. He affirms that he has used cimicifuga racemosa in every case which has come to him in more than fifty years, "and always successfully in a brief time." He recommends the fluid extract of the dried root in teaspoonful doses after each meal, and a fourth dose at bedtime. Several cases reported by Dr. Corson were all speedily alleviated by the cimicifuga, and in one or two instances the duration of the disease would seem to have been materially abridged.

Dr. Corson is persuaded that none of the other remedies in general use for chorea (not excepting arsenic), have half the value of the black snake-root. Its effect is, he thinks, that of a "quieter of the general nervous system," and he has found it in half teaspoonful doses of the fluid extract a charming remedy for insomnia.

Ringer and Phillips regard cimicifuga as an excellent tonic of the nervous system, and especially suitable for cases characterized by failure of coördination.

— The cause of death of the late Professor Panum, the distinguished Danish physiologist, is said to have been thrombosis of the coronary artery, with consequent fatty degeneration, softening, and finally, rupture of the ventricular wall. He died at the age of sixty-three.

THE TWO HUNDRED AND FIFTIETH ANNIVERSARY OF HARVARD COLLEGE.

The seventh of November has come and gone and with it the celebration by Harvard University of the 250th anniversary of the founding of the College by the appropriation for that purpose of four hundred pounds by the colony of Massachusetts Bay. The celebration itself extended over four days; the first of which, Friday, November 5th, was devoted to a reunion of the Alumni of the Law School, for whom their Association had provided an oration, and a good one, delivered by Mr. Justice Oliver Wendell Holmes, Jr., as well as a dinner at which there was some excellent speaking by old alumni and present teachers, of a character calculated to awaken and foster a spirit of enthusiasm and solidarity among the graduates of the school.

The second day was set apart as an undergraduates' day, and the third day, being Sunday, was marked by services in the College Chapel, and devoted to quiet social intercourse among the many alumni, who had already arrived from all parts of the country, and the distinguished strangers from our own country and from beyond seas, who had gathered as representatives of other universities and colleges or to receive the honorary degrees which Harvard distributed with no niggard hand.

Monday, or graduates' day, was devoted to the programme previously announced. The morning was entirely consumed by the exercises in the College Theatre, to which the officers of government and instruction, the invited guests and the alumni marched in procession; at which Hon. James Russell Lowell delivered an oration, and Dr. Oliver Wendell Holmes a poem, which those not fortunate enough to be present, should take pains to read; and where the honorary degrees were conferred. Dr. Leidy, the distinguished anatomist of the University of Pennsylvania, Dr. S. Weir Mitchell, of Philadelphia, and Dr. J. S. Billings, of Washington, received degrees of L.L. D., upon the especial recommendation of the Medical Faculty, and were all three personally present.

The afternoon was occupied by a dinner of the alumni in Memorial Hall. Both of these festivities were honored by the presence of the Chief Executive Magistrate of the United States, President Cleveland, and of Mrs. Cleveland.

The evening brought the celebration to a fitting close by a torchlight procession under the auspices of the students, and by a fine display of fireworks upon the College play-ground.

The whole celebration passed off in the pleasantest and most successful manner possible, leaving behind it precious memories, and doubtless some digestive disturbances, for the bond of friendship was cemented around many tempting tables.

The occasion, apart from its many features and lessons of more general interest, offers one suggestion to the Medical Faculty and Medical School, and that is, the propriety of starting an Association of Medical Alumni. The Medical School is by far the oldest and largest department of the University except the Academic, and yet it had no distinctive celebration of its own existence, nor was it even represented in the students' procession of the closing evening, thus in both respects offering a strange contrast to its younger and weaker sister of the Law.

MEDICAL NOTES.

— The story is again going the rounds of the ingenious physician who traced the cause of a case of lead poisoning to the patient's habit of holding a *lead*-pencil in the mouth.

— In reply to a correspondent asking the best internal finish for a contagious ward in a hospital, the *Sanitary Engineer* answers: "The best finish for walls in such a hospital ward is probably a good sand finish, on which should be placed three coats of paint. This appears to be the least liable to cracks and scaling, and is readily cleansed and disinfected. The best floor is oak or hard-pine, oiled. A painted floor is not satisfactory."

— *Science* speaks of recent experiments with the common tonic, the tincture of the chloride of iron, diluted with water, showing that when thus diluted it acts very injuriously upon the teeth. This is explained by the fact that the peroxide formed in the alcoholic solution is precipitated, when water is present, in such a flocculent form as not to adhere to the surface of the teeth, and consequently, the free hydrochloric acid can act upon the lime-salts of the teeth without let or hindrance. When the tincture is given without water, no action takes place; the peroxide which is then formed is of the anhydrous form, and so compact as to adhere to the teeth, and protect them from the action of the acid. These experiments have resulted in determining that there are three menstrua which can be used as diluents of this tincture, which will produce no injurious effects upon the teeth: they are alcohol in some form, Vichy water, and a simple syrup.

— A story is told by a French paper of Baron von Humboldt, who, during one of his visits to Paris, expressed to his friend, Dr. Blanche, the distinguished authority on matters concerning insanity, a desire to meet one of his patients.

"Nothing easier," said Dr. Blanche. "Come and take dinner with me to-morrow."

Next day Humboldt found himself seated at the dinner-table of the famous alienist, in company with two unknown guests. One of them, who was dressed in black, with white cravat, gold-bowed spectacles, and who had a smooth face and very bald head, sat with great gravity through the entire dinner. He was evidently a gentleman of undoubted manners, but very taciturn. He bowed, ate, and said not a word.

The other guest, on the contrary, wore a great shock of hair brushed wildly into the air; his shabby

blue coat was buttoned askew, his collar was rumpled, and the ends of his crazy necktie floated over his shoulders. He helped himself, ate and chattered at the same time.

Story upon story did this incoherent person pile up. He mixed the past with the present, flew from Swedenborg to Fourier, from Cleopatra to Jenny Lind, from Archimedes to Lamartine, and talked politics and literature in the same breath.

At the dessert Humboldt leaned over and whispered in his host's ear, glancing at the same time at the fantastic personage, whose discourse was still running on.

"I am very much obliged to you. Your maniac has greatly amused me."

"My maniac!" said the doctor, starting back. "Why, that isn't the lunatic! It's the other one.

"What! The one who hasn't said a word?"

"Certainly."

"But who in the world can the man be who has talked in this fashion all the while?"

"That is Balzac, the famous novelist."

BOSTON.

— Dr. J. S. Billings, of the Surgeon-General's office at Washington, is probably the first person to be decorated with an honorary university degree for being a "student and writer in public hygiene, and a medical bibliographer."

— The title of Doctor was invented in the twelfth century, at the first establishment of the universities. William Gordeina was the first person upon whom the title of Doctor of Medicine was bestowed. He received it from the College of Asti, in 1329. — *Medical Library.*

— An informal dinner was given at the Hotel Victoria, Sunday evening, November 9th, the anniversary day of the founding of Harvard College, to the three gentlemen recommended by the medical faculty for the degree of LL.D. Drs. Leidy and S. Weir Mitchell, of Philadelphia; Dr. Billings, of Washington; President Gilman, of Johns Hopkins University; Prof. E. S. Morse, of Salem, were guests of fourteen gentlemen graduates of the College and the Medical School. The occasion was quite informal, without speeches, and proved very enjoyable.

NEW YORK.

— Dr. Julius F. Miner died at his home in Buffalo, November 5th, aged sixty-three years. He was distinguished in the profession and for many years ranked as one of the ablest surgeons in Western New York. He was born in Peru, Mass., graduated at the Albany Medical School, in 1847, and settled in Buffalo in 1855. He was for several years Professor of Clinical Surgery in the Buffalo Medical College, and also editor of the *Buffalo Medical and Surgical Journal.*

— At a meeting of the Board of Education held November 3d, a letter (which was referred to the Committee on Course of Study), was received from Miss Cattell, General Secretary of the Industrial Educational Association, in which she said that the association was desirous of affording the board an opportunity of practically testing certain branches of manual training, and offered during the current school year, free of expense, to such children as could be sent to the Association's building, instruction in industrial drawing and clay modelling for boys and girls, simple carpentering and the use of tools for boys, and sewing, cooking, and domestic economy for girls. A course of free lectures on industrial education was also offered to the teachers.

— At a meeting of the Board of Estimate and Apportionment, held October 26th, Col. Emmons Clark, Secretary of the Board of Health, explained the estimates of that department of the City Government for the year 1887. The sum of $420,268 was asked for, as against $319,000 appropriated for 1886. The amount allowed for 1887, however, was only $272,000, and the salary account was cut down from $211,728 to $170,000, of which the sum of $20,000 is to be devoted to the payment of the Sanitary Corps. President Coleman, of the Department of Taxes and Assessments, said that under the present management (General Shaler still being the President), it seemed to him that in the Health Department, the men who did the most work received the least pay. He had known many valuable men to be discharged, and useless ones kept in their places, and did not believe it advisable that a larger appropriation should be made until there was a change in the present organization of the Board.

Miscellany.

DR. CHARLES D. HOMANS.

AT a meeting held October 25, 1886, the Boston Society for Medical Improvement, desiring to attest its great regard for its late President, Dr. C. D. Homans, unanimously voted to make the following entry in its records:

"In common with a large number of medical and charitable organizations this Society laments the death of its late associate, Charles Dudley Homans. He was one of its oldest still-active members, and his interest in its meetings never failed. For many years he filled the responsible position of Recording Secretary. Under its more recent method of organization he held the office of President; and as one of the Society's Presidential Committee his excellent and reliable judgment was always faithfully at its service.

"Loyalty to his profession and to his convictions, — never to anything which was unworthy, — unswerving rectitude, unostentatious charity — for the faults as well as for the straits of his fellow-men,— ability and attainments, quick business perception, methodical ways, kindly disposition and manners, and a genial sense of humor, won the respect and favor which placed him in many high positions of honor, of trust, and of medical prominence.

"Doctor Homans died, as he would have wished, with his enthusiasm as keen, his mind as quick and tenacious, as in his best days of health, with all the calmness of one conscious of a well-spent life, and with the affection, the gratitude, and the respect of a large circle of friends, patients, and acquaintances which his personal attributes, and his social and official positions had gathered about him."

C. M. Green, *Secretary pro tempore.*

HYSTERICAL APOPLEXY.

At the meeting of the Société des Hôpitaux, August 13th, (*Medical News*, October 2d, and *Gazette Hebdomadaire*, No. 34), Debove communicated the facts of an extraordinary case of hysterical apoplexy in the male. The patient, a man aged thirty-one, formerly quartermaster in the marines, suddenly lost consciousness and remained insensible for twelve hours; but without convulsions and without involuntary evacuations. For two hours there was complete paralysis of the left side, which gradually disappeared, so that in the morning, on admission to the hospital, there was only an enfeeblement with hemianæsthesia. There was no history of any previous malady, and the patient was a vigorous man, but of an emotional temperament. The diagnosis of a hysterical condition was based on the character of the anæsthesia and its cure by suitable agents. The insensibility involved the skin, mucous membranes, muscles, and organs of sense of the left side. There was limitation of the field of vision, lack of perception of violet color, and monocular polyopia. The application of a magnet caused the return of sensibility in the left arm, and at the same time a disappearance of sensation in the corresponding right limb. It required several days' application of the magnet to restore completely the sensibility of the left side. The motor paralysis followed the anæsthesia in its transference from one side to the other, and disappeared with the restoration of sensibility. Only a hysterical condition could present such features, and be modified and cured by the application of magnets.

PHARYNGEAL AND LARYNGEAL NYSTAGMUS.

In a recent issue of the *Lancet*, were published some notes, in the form of a letter, on rapid rhythmic contractions of the pharyngeal and laryngeal muscles, associated with rapid rhythmic contractions of the ocular muscles, in a case of cerebellar tumor in a girl aged twelve years. Commenting editorially upon the case, our contemporary remarks that the importance of this nystagmus of the pharyngeal and laryngeal muscles lies partly in the interest attaching to the phenomenon, and partly in its suggestiveness. In the case in question, great attention was paid to the state of the rest of the nerves of the body, but nothing in the same nature as nystagmus of any other muscle was observed; nor, so far as known, was there any rhythmical recurrence of sensation in any sensory district. The rate of the rhythm in the pharynx and larynx was perfectly synchronous with the rate of action of the muscles of the eyeball. The ocular nystagmus was of a mixed vertical and horizontal description. It is hardly likely that the symptom which Dr. H. R. Spencer discovered in this case of cerebellar tumor is of common occurrence either in tumors of the brain or in any other disease of the central or peripheral nervous system, but its present recognition will doubtless stimulate observation, and may lead to a still further extension of knowledge. The symptom is a genuine one, and evidently not dependent on a combination of conditions whose balance is easily upset, for the nystagmus has been in constant active operation for at least two months. The rate of the pharyngo-laryngeal contractions, like the synchronous nystagmus of the eyeball, is 180 per minute. It is worth while remembering the circumstance that the muscles which are the seat of the rapid nystagmus in this case are sometimes employed volitionally, and at other times automatically or reflexly. Another feature of the case to which Dr. Spencer alludes is the rate of the pulse, which is unaccountably frequent, being 160 per minute. It may be that this is related in some way to the action of the pharyngo-laryngeal muscles, whose motor fibres in the vagus are derived, in part, at least, from the spinal accessory nucleus, which is also believed to preside over the rate of action of the heart.

INTER-STATE NOTIFICATION IN INFECTIOUS AND CONTAGIOUS DISEASES.

The following resolutions, presented by the National Conference of State Boards of Health, were adopted by the American Public Health Association at Toronto, October 8th, 1886:

Whereas, It is necessary, for the protection and preservation of the public health, that prompt information should be given of the existence of cholera, yellow fever, and small-pox, be it

(1) *Resolved*, That it is the sense of the National Conference of State Boards of Health that it is the duty of each State, provincial, and local Board of Health, in any locality in which said diseases may, at any time, occur, to furnish immediately information of the existence of such disease to Boards of Health of neighboring and provincial States, and to the local Board in such States as have no State Board.

(2) *Resolved*, That, upon rumor or report of the existence of pestilential disease, and positive, definite information thereon not being obtainable from the proper health authorities, this Conference recommends that the health officials of one State shall be privileged and justified to go into another State for the purpose of investigating and establishing the truth or falsity of such reports.

(3) *Resolved*, That whenever practicable, the investigations made under the preceding section shall be done with the coöperation of the State or local health authorities.

(4) *Resolved*, That any case which presents symptoms seriously suspicious of one of the aforenamed diseases shall be treated as suspicious and reported, as provided for in cases announced as actual.

(5) *Resolved*, That any case respecting which reputable and experienced physicians disagree as to whether the disease is or is not pestilential, shall be reported as suspicious.

(6) *Resolved*, That any case respecting which efforts are made to conceal its existence, full history and true nature, shall be deemed suspicious and so acted upon.

(7) *Resolved*, That, in accordance with the provisions of the foregoing resolutions, the Boards of Health of the United States and Canada represented at this Conference, do pledge themselves to an interchange of information, as herein provided.

In addition to the resolutions presented by the National Conference of State Boards of Health and adopted by the American Public Health Association, the following from the Advisory Council of the Association were also adopted:

Whereas, it is necessary for the protection and preservation of the public health that prompt information should be published of the existence of cholera, yellow fever and small-pox:

(1) *Resolved*, That the American Public Health Association believes it to be the duty of each State and provincial Board of Health within whose jurisdiction one of these diseases shall appear, to give immediately notice of the existence of the same to neighboring State and provincial Boards of Health, and to the Boards of towns and cities in neighboring States and provinces which have no central Board. In such States and provinces this duty of notification lies upon the local Boards.

(2) *Resolved*, That it is the sense of this Association that whenever rumors of the existence of pestilential disease in a State or province prevail, and, upon application to the health authorities of said State or province, information respecting the truth of the rumor is refused, the health officials of another State or province are justified in entering the before-mentioned State or province for the purpose of investigating and establishing the truth or falsity of such rumor. In conducting the investigation, every reasonable effort should be made to coöperate with the health authorities of the locality.

(3) *Resolved*, That a case which so nearly resembles one of the specified diseases as to raise a reasonable suspicion of its character, or a case in which concealment is attempted, ought to be reported as a suspected case, in the same manner as if the diagnosis was certain.

IRVING A. WATSON,
Secretary American Public Health Association.

AS OTHERS SEE US.

AN entertaining writer in *London Truth* discourses about the "Physician Himself" from the lay point of view. He says: "The easy-going general practitioner, whether in town or country, but especially in the country, has always appeared to me to have a delightful time of it. An income of some £500 to £700 a year, plenty of moving about, plenty of intercourse with all sorts and conditions of men, and the satisfaction of doing a certain amount of good, and (all things considered) not much mischief, and being paid for both — these are the charms of country doctoring. I confess, I like doctors. They are, for the most part, chatty, pleasant, tolerant men, easy to get on with. The fact is, it is their business to make themselves agreeable, and they get into the habit of being so, even with people who are not, and have no intention of becoming their patients.

Of course, now and then a doctor may find it pay to go in for being habitually rude, and a curmudgeon. Some people — women, I think, more frequently than men — rather like a bear for a doctor. But there is this to be remembered about bearishness — it wants some sort of a reputation to back it. "Rough and Ready" are nags that sometimes go well enough in the medical tandem. But Ready must always go first. A doctor must show himself expert in his business before he sets up to be impertinent out of it. Nobody will put up with impertinence in a young man just starting, and with his spurs yet to win — nobody, that is to say, except the very poor. The very poor and ignorant, I think, like their doctor to be unpleasant, just as they like the medicine to be nasty, and do not believe in it unless it is hard to swallow. When the draught is so horrible that it seems to curdle the soul, then only do they conceive that it "is taking hold," as they say, and will do them good. But although the poor may like the physic to be bitter, and the doctor domineering and rough, these are not the tastes, as a general rule, of the more profitable class of patient. Accordingly, the doctor who means to get on makes it his business to be bland himself, and sees that his prescriptions are as little offensive as the combined resources of chemistry and confectionery will allow.

A doctor may very easily make a fair reputation and a good deal of money without much knowledge of medicine; for this reason, that the science of medicine is a closed book to the vulgar. When a man dies, none of the friends (unless there chance to be a coroner's inquest) know in the least degree what killed him. And if you call in some great medical gun at the last moment, the great medical gun is sure (indeed, I believe by the etiquette of the profession he is bound) to tell you that your doctor has "treated the case most judiciously." On the other hand, when a sick man gets well, no one knows what cured him, and the doctor — who was, perhaps, on the wrong track throughout — gets all the credit. Thus, the best — indeed, almost the only — way in which a doctor can convince his patients that he is wise and knowing in his profession is by showing them that he is a clever and well-informed man out of his profession. Of his science as a doctor they are not in a position to judge; but, if he talks sensibly about subjects which they do understand — stocks and shares, and pictures, and last night's debate in Parliament, and has fair luck with his cases — then his patients will trust and swear by him. I remember one very sad illustration of the injury which a doctor does himself who drops behind in his general information. A friend of mine who had married a wife from the county Westmeath (in those days a very "disturbed" district) came home one afternoon from the stock exchange and found the lady in a terrible state of excitement, piling the fire with pill boxes, and throwing "the mixture as before" out of the window. On investigation, it turned out that the doctor had called, and in the course of conversation had innocently and casually inquired: "What is this habeas corpus, can you tell me, Mrs. Blank, which they talk of suspending in Ireland?" To a lady who had grown up from childhood with the habeas corpus perpetually suspended over her like a drawn sword, the ignorance thus displayed was too shocking. Not a drop of that man's medicines, she declared vehemently, should ever pour down the throats of her children. This shows, I think, that the sensible doctor will do well to look into a book occasionally, and to read the morning papers — but, of course, not the leading articles. This is a punishment reserved exclusively for the editor.

Correspondence.

ABORTIVE TREATMENT OF FELONS.

AMHERST, October 30th, 1886.

MR. EDITOR, — The abortive treatment of felons by the use of collodion has been called for.

In the JOURNAL for March 31, 1881, was a valuable article by Dr. A. N. Blodgett, upon the treatment of strains and sprains by *contractile* collodion, which suggested to me its use for the purpose of aborting felons.

I have used it with success, first upon my own finger in 1881, and afterwards in several other similar cases.

The collodion probably acts by forcing the excess of blood out of the finger and preventing its return, as does the wet rag of Dr. E. T. Williams and the egg-skin treatment of our grandmothers.

It was the remembrance of the latter that led me to try the collodion. Five or six coatings should be applied half way round the finger, and the application is to be repeated whenever the film of collodion breaks or begins to peel off; if applied entirely around the finger the contraction will cause unbearable pain.

I have used the contractile collodion with success in effusions of the knee, in œdema of the hand after fracture of the arm, and in the protrusion of the umbilicus in infants.

I have also used it to hasten the absorption of extravasated blood, especially upon the face and eyelids, after injuries. Very respectfully,

D. B. N. FISH, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 30, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	667	270	27.15	18.40	8.40	2.55	11.55
Philadelphia	971,393	—	—	—	—	—	—	—
Brooklyn	690,000	283	110	21.00	12.30	4.65	1.75	8.75
Chicago	630,000	239	103	27.72	13.02	5.04	3.36	15.12
Boston	390,406	162	40	13.00	21.45	.65	4.55	6.50
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	148	63	21.76	12.24	2.72	2.04	10.88
Cincinnati	325,000	115	53	29.58	13.05	4.35	1.74	15.66
New Orleans	238,000	—	—	—	—	—	—	—
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	76	37	36.96	19.80	6.60	2.64	23.86
Pittsburgh	190,000	—	—	—	—	—	—	—
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	32	12	40.69	25.04	9.39	3.13	9.39
Charleston	60,145	35	16	11.44	11.44	5.72	—	2.86
Worcester	68,383	20	4	10.00	15.00	5.00	—	—
Lowell	64,051	25	10	12.00	4.00	—	—	4.00
Cambridge	59,950	14	6	7.14	—	—	—	—
Fall River	56,853	23	13	13.05	8.70	4.35	—	4.35
Lynn	45,861	7	3	—	14.28	—	—	—
Lawrence	38,825	9	—	11.11	—	11.11	—	—
Springfield	37,577	12	3	8.33	8.33	—	8.33	—
New Bedford	33,393	14	3	14.28	21.42	14.28	—	—
Somerville	29,922	—	—	—	—	—	—	—
Salem	28,084	8	3	—	—	—	—	—
Holyoke	27,894	12	6	33.33	33.33	25.00	8.33	—
Chelsea	25,709	2	1	50.00	50.00	—	—	50.00
Taunton	23,674	7	0	—	—	—	—	—
Haverhill	21,795	8	1	25.00	—	—	25.00	—
Gloucester	21,713	8	6	50.00	—	—	25.00	25.00
Brockton	20,783	—	—	—	—	—	—	—
Newton	19,759	4	1	25.00	—	—	25.00	—
Malden	16,407	5	3	—	—	—	—	—
Fitchburg	15,375	4	1	25.00	—	—	—	—
Waltham	14,609	3	1	—	33.33	—	—	—
Newburyport	13,716	3	0	—	33.33	—	—	—
Northampton	12,896	4	1	—	—	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 1,949: under five years of age 770: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 460, consumption 245, lung diseases 287, diphtheria and croup 202, diarrhœal diseases 85, typhoid fever 55, malarial fevers 34, measles 27, whooping-cough 24, scarlet fever 23, cerebro-spinal meningitis six, erysipelas two (small-pox (Brooklyn) one. From malarial fevers, New York 15, Brooklyn seven. Baltimore six, Chicago four, Charleston one. From measles, New York 19, Cincinnati and Pittsburgh three each, Chicago and Nashville one each From whooping-cough, New York eight, Cincinnati, four, Baltimore and Nashville three each, Brooklyn and Pittsburgh two each, Lowell and Fitchburg one each. From scarlet fever, Brooklyn seven, New York six, Pittsburgh three, Chicago and Cincinnati two each, Boston, Lowell and Fall River, one each. From cerebro-spinal meningitis, New York three, Chicago two, Pittsburgh one. From erysipelas, Chicago and Boston one each. From puerperal fever, Pittsburgh one.

In the 24 cities and greater towns of Massachusetts, with a population of 1,067,629 (population of the State 1,941,465), the total death-rate for the week was 18.07 against 20.23 and 17.41 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,033,817, for the week ending October 16th the death-rate was 18.9. Deaths reported 3,287: infants under one year of age 999; acute diseases of the respiratory organs (London) 223, diarrhœal diseases 271, fever 79, scarlet fever 75, measles 51, diphtheria 34, whooping-cough 30

The death-rates ranged from 13.9 in Bristol to 34.5 in Preston; Birmingham 20.1; Blackburn 27.3; Brighton 16.6; Hull 25.9; Leeds 24.3; Leicester 19.8; Liverpool 23.8; London 16.0; Manchester 24.5; Newcastle-on-Tyne 23.5; Nottingham 22.3; Sheffield 18.1; Sunderland 19.2.

In Edinburgh 15.2; Glasgow 23.9; Dublin 22.5.

For the week ending October 16th, in the Swiss towns, there were 34 deaths from diarrhœal diseases, consumption 22, lung diseases nine, typhoid fever three, diphtheria and croup three, whooping-cough and erysipelas each one.

The death-rates were: at Zurich 3.8; Geneva 10.1; Basle 14.1; Berne 16.0.

The meteorological record for the week ending October 30, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Oct. 30, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, ...24	30.435	46.7	45.0	35.5	74.0	62.0	68.0	68.0	N.	S.E.	S.W.	10	11	8	C.	C.	C.	—	—
Monday, .. 25	30.211	52.1	60.2	39 0	76.0	61.0	87.0	74.7	S.	S.W.	W.	6	15	6	O.	O.	C.	—	—
Tuesday, .26	30 402	48.3	53.2	46.5	83.0	83 0	85.0	83.7	W.	E.	E.	4	16	18	F.	O.	R.	—	—
Wednes... 27	30.212	45.4	47.6	44.2	94.0	100.0	100.0	98.0	E.	E.	N.	18	22	16	R.	R.	R.	—	—
Thursday, 28	29.948	46.6	49.5	40.8	98.0	95.0	100.0	97.7	N.	N.E.	E.	8	13	14	O.	R.	R.	—	—
Friday, ...29	29.983	49.2	51.1	47.2	100.0	98.0	100.0	99.3	N.E.	N E.	N.E.	20	24	21	R.	R.	R.	—	—
Saturday, 30	29.914	47.1	49.1	45.0	100.0	100.0	100.0	100 0	N.E.	N.E.	N.E.	13	13	34	R.	R.	R.	68.00	2.74
Mean, the Week.	30.158	47.1	50.9	42.6				88.8											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 30, 1886, TO NOVEMBER 5, 1886.

CLEMENTS, B. A., major and surgeon. Died November 1, 1886, at Fort Leavenworth, Kans.

MIDDLETON, J. V. D., major and surgeon. Ordered from Department of Missouri to David's Island, New York Harbor.

WOODHULL, A. A., major and surgeon. Ordered from David's Island, New York Harbor, to Department of Missouri.

WILLIAMS, J. W., major and surgeon. Ordered from Department of Colorado to Department East.

CORSON, J. K., captain and assistant surgeon. Ordered from Jefferson Barracks, Mo., to Department of Colorado, upon expiration of present leave of absence.

TURRILL, H. S., captain and assistant surgeon. Ordered from Department Platte to Department of Colorado.

MUNDAY, BENJ., first lieutenant and assistant surgeon. Ordered from Department of Colorado to Jefferson Barracks, Mo., S. O. 252, A. G. O., October 29, 1886.

OWEN, WM. O., JR., first lieutenant and assistant surgeon. Relieved from duty at Fort Schuyler, New York Harbor, and ordered for duty as post surgeon, Plattsburg Barracks, N.Y. S. O. 170, Division of the Atlantic, October 29, 1886.

EDIE, GUY L., first lieutenant and assistant surgeon. Ordered from Fort McIntosh, Tex., to Post of San Antonio, Tex. S. O. 152, Department of Texas, October 27, 1886.

HARRIS, H. S. T., first lieutenant and assistant surgeon. Ordered from Post of San Antonio, Tex., to Fort Clark, Tex. S. O. 152, Department of Texas, October 27, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING NOVEMBER 6, 1886.

NEILSON, J. L., surgeon. Ordered to the Receiving Ship "New Hampshire."

DRENNAN, M. C., surgeon. Detached from Receiving Ship "New Hampshire" and granted one years' leave.

SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY. OBSTETRICAL AND GYNÆCOLOGICAL SECTION. — There will be a meeting of this Section at the large Medical Library Room, 19 Boylston Place, on Wednesday evening, November 17th, at 7.45 o'clock. Communications: Dr. W. E. Boardman, "A Case of Labor complicated by Fibroids, with some Remarks." Dr. E. W. Cushing, "On Erosions of the Os Uteri, with Demonstration by Stereopticon of Photographs from Life and Micro-Photographs." Dr. Cushing will show four ovarian tumors removed in the last two months, and a curiously large mass of glands scraped from the uterus. Gentlemen are especially urged to prepare papers for the Section and to notify the Secretary of their willingness so to do, and are requested to exhibit specimens or apparatus at any of the meetings. Refreshments after the meeting.

JAMES R. CHADWICK, M.D., *Chairman.*
ROBERT B. DIXON, M.D., *Secretary.*

APPOINTMENT.

Dr. T. M. Rotch was appointed during the summer a visiting physician at the Boston City Hospital.

DEATH.

Died in Salem, Mass., November 4, 1886, Frank Albert Durgin, M.D., M.M.S.S., aged thirty-one years.

BOOKS AND PAMPHLETS RECEIVED.

The Curability of Insanity: a Series of Studies. By Pliny Earle, A.M., M.D. Philadelphia: J. B. Lippincott Co. 1887.

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Volume 69. London: Longmans, Green & Co. 1886.

Biennial Report of the Officers of the Vermont Asylum for the Insane for the Two Years ending July 31st, 1886. Rutland: 1886.

In Memoriam. Austin Flint, M.D., LL.D.; James Marion Sims, M.D., LL.D. By Wesley M. Carpenter, M.D., of New York. 1886.

Annual Report of the Commissioner of Pensions to the Secretary of the Interior for the Year ended June 30, 1886. Washington: 1886.

The Amblyopia of Squinting Eyes: is it a Determining Cause or a Consequence of the Squint? By Samuel Theobald, M.D., Surgeon to the Baltimore Eye, Ear, and Throat Charity Hospital. 1886. (Reprint.)

Method of Managing Typhoid Fever. By F. Peyre Porcher, M.D., Charleston, S.C. Read at Washington, D.C., July 17th, before the Association of American Physicians. 1886. (Reprint.)

Annual Report of the Boards of Regents of the Smithsonian Institution showing the Operations, Expenditures and Condition of the Institution for the Year 1884. Part II. Washington: Government Printing Office. 1885

Congrès Périodique International des Sciences Médicales 8me Session. Copenhagne. 1886. Compte. Reader. Publié an nom du Bureau par C. Lange. Secretaire-général. Tomes I, II, III, IV. Copenhagen. Libraire Gyldendal. (F. Hegel and Fils.) 1886.

A Manual of Obstetrics. By A. F. A. King, A.M., M.D., Professor of Obstetrics and Diseases of Women and Children in the Medical Department of the Columbian University, Washington, D.C. With 102 illustrations. Third Edition. Philadelphia: Lea Brothers & Co. 1886.

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Lecture.

ON DIET IN DIABETES.

A LECTURE ON ALIMENTARY THERAPEUTICS.

BY PROF. DUJARDIN-BEAUMETZ, M.D.,
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In the last lecture we had under consideration the hygienic treatment of gout and gravel. I propose to devote the present lecture to the subject of diet in diabetes. For the diabetic, diet constitutes the sovereign curative means, it being only by the application of rigid dietetic regulations, that we can, in a great number of cases, cause the disappearance of sugar from the urine; hence we need to spend considerable time on this subject. But in order to establish on scientific basis the alimentary regimen of diabetes, it is necessary that I should briefly sum up the data in our possession respecting the pathogeny of this affection.

Till the discovery of glycogenic function of the liver, and the immortal labors of Claude Bernard, the etiology of diabetes was involved in great obscurity. Claude Bernard gave us our first insight into the causes of this disease, and now, for almost forty years his pathogenetic doctrine, despite the most searching criticism, still remains master of the field.

Bernard showed us this capital fact that in the physiological state in all mammals and in man sugar is found in the blood. This is what he calls *physiological glycæmia.* When the figure of glucose in the blood exceeds certain limits — 3 per 1000, it passes out in the urine and determines glycosuria.

Whence comes this physiological sugar? It has two sources: either it results from the food, or it is produced by the liver. In previous lectures, I have shown you that amylaceous substances when modified by the salivary diastase, and by a special ferment of the pancreas, amylapsin, enter the economy in the state of glucose, and that the sugars, inverted by the intestinal juice, also reach the circulation in the state of glucose. We have here a constant source of glucose furnished to the blood. When the quantity of these amylaceous or saccharine aliments is too great, all the glucose formed is not burned in the economy, the figure of physiological glycæmia is exceeded, and there results a temporary glycosuria, known under the name of *alimentary glycosuria.*

The other source of sugar is the liver. In 1848, Claude Bernard first called attention to a new function of the liver, and since then, on many different occasions, he has elucidated his important discovery and its practical consequences. The glucose contained in the blood deposits in the liver a substance similar to starch, *glycogen*, which, under the influence of an hepatic ferment, is transformed into glucose; this constitutes the glycogenic function of the liver.

The liver, with respect to physiological glycæmia acts the part of a regulator of this function. When too much glucose is furnished by the food, the liver stores up, under the form of glycogen, the excess which is not utilized. When elements suitable for making sugar are not furnished by the food, it is then that the liver furnishes it to the blood, so as always to maintain an equal quantity of glucose in the economy. But let some disturbance of a nervous order come in to modify the cellular exchanges in the liver, then this organ makes more sugar than the normal proportion, and this excess enters the blood; the figure of 3 per 1000 is exceeded, and glycosuria results; in a word, hyper-glycogenesis produces hyper-glycæmia. Claude Bernard even realized experimentally this hyper-glycogenesis by wounding in animals certain parts of the fourth ventricle.

Such were the bases on which Bernard established the pathogeny of diabetes, and, as I told you in the beginning, physiologists have more or less modified this pathogenic doctrine, but without overthrowing it.

Thus it is that Pavy has denied the transformation of glycogen into sugar, is a physiological fact. According to him, (as also to Schiff, Meisner, Tschsrinow and Seegen), this is a fact of pathological order; the glycogen accumulated by the liver, serving in the normal state, to make, not sugar, but fat. Bouchard, Jaccoud, Lecorché, and Esbach have also completed the doctrine of Claude Bernard.

Lecorché, to whom, by the way, we are indebted for an excellent treatise on diabetes, assigns an important part to the increased secretion of urea which almost always accompanies glycosuria. According to him, the liver in diabetic persons under an influence which escapes us, undergoes an exaggeration of its glycogenic functions. It now makes sugar, not only out of amylaceous and saccharine matters, but also from all sorts of albuminoid substances, and even from the muscles of the diabetic patients, transforming the albuminoid into glycogen and urea.

Jaccoud adopts the same view; he divides diabetes into two stages. At the onset, there is only glycosuria; then at a more advanced period there is azoturia and glycosuria; this is what he describes under the name of *azotized diabetes.*

On the other hand, Bouchard, returning to the notions of Dechambre, Reynoso, and Mialhe, who considered diabetes as due to insufficient utilization of the sugar produced, labors to show that hyper-glycæmia results from the fact that the organism does not accumulate the sugar incessantly furnished by the liver. He points out the fact that the liver produces daily about two kilogrammes of sugar, of which seven hundred and ninety-eight grammes only are burned by the respiration. The twelve hundred grammes remaining ought to be utilized by our tissues. Let some circumstance intervene to modify the molecular exchanges, these twelve hundred grammes of sugar will not be employed by nutrition, and glycosuria will appear. Hence Bouchard refers diabetes to the general troubles of nutrition, which he has described under the name of *retarded nutrition.*

Lastly, in a very original and quite recent work,[1] Esbach has modified the theory of Claude Bernard. According to him, the diabetized liver produces a particular kind of glucose which loses the property of being destructible. He opposes this non-destructible sugar, which he calls *diabetose*, to the sugar furnished by the liver in the physiological state, to which he gives the name of *assimilable glucose.*

As you see, gentlemen, the new theories of the pathogeny of diabetes have but little modified Claude Bernard's doctrine. Basing ourselves on these data, we can establish on a scientific foundation the alimentary hygiene of the diabetic.

This hygienic treatment must fulfil the two following great conditions: On the one hand, it must reduce to their minimum foods, which introduced into the

[1] Printed from advance sheets.

economy may furnish glucose, and on the other, energize as much as possible the combustion of the glucose formed in the economy.

But before entering into the details of this treatment, I must say a few words about the prognosis of diabetes. This prognosis is entirely based on the effects of an antidiabetic regimen rigorously followed. Never forget, in fact, that it is not the quantity of sugar voided daily in the urine which constitutes the gravity of the prognosis in diabetes; it is the greater or less facility with which the sugar disappears under the influence of diet.

In this respect we meet with three forms of diabetes which I have called *mild diabetes.*

DIABETES OF MEDIUM INTENSITY, AND GRAVE DIABETES.

In his interesting studies on diet in glycosuria, Duhomme has given to these three forms the names of simple uroglycosis, mixed uroglycosis, and complex uroglycosis.[2]

In mild diabetes, by the simple fact of an appropriate alimentary treatment the sugar disappears rapidly and completely from the urine, whatever may have been the quantity previously voided. I have for my part seen great numbers of diabetics who were losing daily from four to eight ounces of sugar, and who, after eight days of treatment according to Bouchardat, excreted none at all. It should be understood that in these patients the least infraction of diebetic rules brought back the glycosuria; these are the mild cases.

In diabetes of medium intensity, you will diminish considerably by rigid dieting the quantity of sugar voided, without, however, causing it to disappear entirely, and there will always be an amount in the urine varying between ten and twenty grammes. Bouchardat calls these cases "*petits diabetiques*, that is, *little diabetics.* Often certain medicines will cause, in these patients, complete disappearance of the sugar.

Lastly, in the grave forms of diabetes, whatever may be the rigorousness of your dietetic rules, the quantity of sugar eliminated is always considerable, and when the food which these persons eat does not contain the elements proper for making sugar, the substance of their muscles is transformed into glycogen and urea. These are the lean diabetics, the azoturic diabetics all condemned to a sure and speedy death.

As you see, the prognosis depends entirely on the results of diabetic treatment. What, then, should be the diet in diabetes? Exclusive regimens, have been proposed, and mixed regimens. The former are two in number; the adipo-carneous, and the milk regimen. Cantani has the most earnestly advocated a rigorous flesh and fat diet treatment; he allows nothing but meat and fat. The fats are designed to take the place of the carbo-hydrates, of which he deprives his patients entirely. The patient can eat no vegetable, no starchy food of any kind, and no eggs. Salt is permitted, as well as salt meats and salt fish. To this treatment, Cantani conjoins the usage of lactic acid. This is administered under two forms: as pure lactic acid, in the dose of fifteen to thirty grains in four ounces of water, and half an ounce of fennel water, three times a day, or in the form of an alkaline lactate, eight grains of bicarbonate of soda being added to four ounces of the lactic acid solution above mentioned. This dose of lactate of soda is repeated every hour or every two hours. Lastly, at the end of a certain time, fifteen or twenty days, if the sugar is not all gone from the urine, Cantani orders a twenty-four hour's fast.

Cantani's treatment has had few partisans, and this for several reasons. First, by reason of the repugnance of patients to eating nothing but meat and fat, a repugnance such that many of these prefer to remain diabetic rather than persevere with such a diet. Moreover, an exclusively meat diet notably augments the azoturia of these patients, already predisposed thereto by the fact of their diabetes. Likewise the uric acid gravel with which many diabetics are affected is markedly aggravated under this regimen. In fact, if we may trust Jaemiche, Caplick, Bond, Windl, and Ebstein, the meat diet determines the presence of acetone in the urine and thereby favors acetonæmia in the diabetic.[3] I discard, then, for these reasons the exclusive adipo-carneous regimen.

Donkin, an English physician, was the first to advise an exclusive milk diet in diabetes. This is his method of treatment; he begins with four to six pints of skim-milk a day, and gradually increases to twelve pints. Of these twelve pints, seven or eight only should be taken liquid, the rest is ingested in the state of curds. The milk should be drunk tepid. At the end of a fortnight, according to Donkin, the sugar will have completely disappeared from the urine.[4]

I do not know whether cases of amelioration obtained by this method are numerous; Kultz, who has tried it, affirms that he has derived no good result. For my part I think it a dangerous treatment. Just think of giving to a polydipsic patient six quarts of milk a day! Think of giving him, moreover, a substance which contains a notable quantity of sugar! Such treatment can but aggravate the malady. I have always seen in diabetic patients that were allowed to drink freely of milk a marked augmentation of their glycosuria, and like Bouchardat, I discard milk from the dietary of the diabetic.

We are indebted to Bouchardat for the principle of the mixed alimentary treatment of diabetes, and in formulating these principles in so exact and practical a manner, my venerated master has earned the gratitude of the entire medical profession, for now we are able by diet alone to cause sugar entirely to disappear from the urine in a great many cases, and in all we obtain a marked amelioration.

In order that you may sufficiently grasp the importance of this regimen, I will consider it under three heads: bread, drinks, and foods allowed and forbidden.

Bread is an aliment which may well be called indispensable, so accustomed are we to it from our earliest childhood, and the introduction of gluten bread into the dietary of the diabetic, for which we are indebted to Bouchardat, is one of the most important parts of this alimentary regimen. Many patients, in fact, refuse to eat when bread is not given them, and you should not forget that voluntary or involuntary abstinence is always prejudicial to diabetic patients. Habitually gross eaters, the diabetic have need of a reparative and substantial diet, and when you come to cut off the necessary supplies of food, grave symptoms

[2] Duhomme. On Diet in Glycosuria. (Bull. et Mém. de la Soc. de Thérapeutique, Séances des 23 Nov. 1881, 14 Mars., 1883, 13 Jan. 1886).

[3] Ebstein. Arch. f. Klin. Med., xxx, 1881. Cantani. Du Diabète Sucré, Paris, 1876.

[4] A. Scott Donkin, in Lancet, 1877. Kultz. Experimentelles über Diabetes, (in Deutsch. Zeitschr. f. prak. Med., 1876, p. 150–152).

on the part of the patient are almost sure to supervene; he grows feeble, emaciates, and becomes a suitable culture soil for bacilli to thrive in. You ought, then, as far as possible, to respect the appetite of diabetic patients, and do nothing to impair it, and this is one of the causes which have led us to abandon the exclusive regimens.

Bread is an alimentary necessity, and you will recognize this fact by ordering gluten bread. But gluten bread is of variable quality, some bakers having more starch, some less in their gluten bread. The French gluten bread, which is dried in slices, contains the least proportion of amylaceous principles. Bouchardat was prone to order Cormier's brand. This kind of bread, however free it may be from starch, and however well it may fill the indications, often fails to satisfy the patient, who is apt to fancy most the bread which contains the least gluten. I am told that the Health Food Company of New York[5] make an excellent flour, which retains well the salts of the wheat, while being comparatively free of the starch.

It is quite a common thing to see diabetic patients, who, despite the augmentation of glucose in their urine, affirm that they have not transgressed their dietitic rules. I have generally found, in the case of such patients, by pressing my inquiries, that they had been substituting for the gluten bread which I had prescribed a preparation like the French rusks (échaudé), which contains considerable starch. This is a great mistake; there is not much difference between this latter product and ordinary baker's bread, the former containing 54.1 per cent. of starch, and the latter 56 per cent.

It has been proposed to replace ordinary bread by almond bread, and this substitution has been especially recommended in Germany. If these almond loaves or cakes constitute a kind of bread that may be taken with safety by the diabetic, they are certainly not very palatable, and in France we make little use of them.

Dannecy, of Bordeaux, has proposed a mixture of bread-crust and meat-powder. Others, taking advantage of the difficulty which most diabetic patients experience in masticating their food, on account of bad teeth or the want of teeth, have advised bread-crust or toasted bread. Esbach, in a late article in the *Bulletin de Thérapeutique* (t. CIV., p. 201), has, however, shown that in equal weights, the crust of bread contains more sugar-producing substance than the crumb, and that it is a mistake to prescribe crust for the diabetic. The following table from Esbach sets this clearly before you:

	Sugar.
100 grammes of crust of ordinary bread produce	76 grammes.
100 " of crumb of ordinary bread produce	52 "
100 " of ordinary gluten bread furnish	18 "
100 " of good potatoes, boiled, give	17 "

I call your attention especially to the statement with reference to potatoes, which seems to me a little exaggerated, if we may trust the analyses furnished by Mayet, who maintains that 100 parts of cooked potatoes (baked, it is true, not boiled) yield only 8.30 of sugar, while 100 parts of gluten bread yield 27 parts.

I cannot too much insist on the utility of potatoes in the diet of diabetic patients who cannot dispense with bread. Of all amylaceous food substances, potatoes contain the least starch, and for that reason, produce the least sugar, and the difference between gluten bread and potatoes is so greatly in favor of the latter, that you will do well, in most cases, to subject your patients to the English regimen, that is, suppressing bread, and substituting baked potatoes.

The subject of drinks is also one of importance, polydipsia being one of the results of this disease. Many victims of diabetes become intemperate, and this happens the more naturally, that they resist better than others the effects of alcoholism. Persuaded that they will find in alcoholic beverages a tonic which they need, they drink their wine pure, or mix brandy with their water. The quantity which they add may be small, it is true, but as the spirituous draught is constantly being repeated, a large amount will have been imbibed by the time the day is done.

In fine, so strong is the temptation to indulge in "bitters" and other liquors under which the diabetic patient labors when walking along the thoroughfares where drinking-saloons abound, that he is in danger of becoming an inveterate tippler. One of my preceptors, the late Chassaignac (I have had three who were diabetic), has often told me that he suffered a veritable Tantalus punishment when going through the public streets, and seeing in full view the liquor saloons and the tipplers inside, and notwithstanding the possession of a strong will, he found himself continually yielding to the propensity to quench his thirst at some of the drinking-booths which he passed.

I believe, then, with Bouchardat, that we should restrict as far as possible the use of alcoholic drinks in glycosuria. The patient should be allowed to drink freely, at his meals, of wine diluted with some alkaline mineral water, but he must not be permitted to drink between meals. If he must have something to quench his thirst, let it be weak tea or coffee, without sugar or milk, or some mild bitter ptisasi, like infusion of chamomile or quassia. I prescribe milk for reasons I have before mentioned.

I come now to foods that are permitted, and those that are forbidden. In order to guide you in the choice of foods proper for the diabetic, and such as should be interdicted, you should always have before your eyes the following table, which shows the proportion of starch or saccharine material in various alimentary substances. I borrow the first of these tables from Dr. Nedats. Table I, gives you the proportion of starch in the principal amylaceous aliments:

	Per Cent.		Per Cent.
Rice	74.10	Wheat Bread	42.70
Corn meal	65.50	Oatmeal	39.10
Wheat flour	63.00	Peas	37.00
Wheat (unground)	59.60	Rye bread	36.25
Rye meal	59.84	Beans	36.00
Millet seed	57.90	Cucumbers	16.60
Buckwheat	50.00	Potatoes	15.50

You can compare this table with the following by Boussingault, the first column showing the per cent. of vegetable, albumen, gluten, legumin and the like; and the second column the per cent. of starch, dextrim, and the like principles.

Round gluten biscuits	44.9	40.2
Gluten cakes	21.3	64.7
Barley bread	18.9	66.6
French rusks	10.9	51.3
Maccaroni	9.5	76.4
Sago	9.1	74.7
Bakers bread of Paris	7.0	56.3
Rice	7.5	76.0
White Beans	26.9	48.8
Lentils	25.0	55.7
Peas	23.8	55.7
Potatoes	2.8	23.2

[5] A reliable chemical examination of the diabetic *biscuits* sold by this Company showed that they contain 74+ per cent. of sugar-forming material, and under the microscope, the field was crowded with starch granules. This percentage of sugar-forming material is even higher than that of ordinary fresh bread, the moisture of which counts for much. Diabetics, or their advisers, had better have all so-called "diabetic foods" carefully examined before using them.

Lastly, Mayet has given in terms of sugar the quantity of starch contained in 100 parts of the following amylaceous substances, and these are his figures:—

	Per Cent.		Per Cent.
Turnips	7.00	Lentils	22.05
Baked potatoes	8.50	Rice cakes	25.00
Boiled rice	8.00	Fresh gluten bread	27.07
Peas	12.00 to 15.00	Vichy Company bread	31.00
Beans	16.00	Ordinary bread	60.00
Carrots	16.00	Wheat meal	70.00
Chestnuts	20.00	Starch	83.00

Stews may be permitted with some limitation, especially such as are fatty, and "bouillon" with poached eggs. Broth made with vegetables, and in particular with onions and cabbages is allowable, as well as "Julienne" soups, but neither turnips nor carrots must enter into their composition. You will also allow broth made with potatoes, to which beets may be added, but you will forbid pea-soup, and bean-porridge, also stews containing dumplings. Custards are also to be prohibited, as also other culinary preparations containing milk.

All kinds of meat are allowed, that is, the flesh of animals, fish, mollusks and crustaceans. Sauces which contain flour are to be interdicted, also those into which milk or cream enters as an ingredient. You will also forbid fish fried in meal.

All kinds of fatty foods are permitted; they may even be eaten very freely in order to furnish to the economy the carbo-hydrates that are necessary. All kinds of amylaceous and saccharine materials are, as before said, to be interdicted, except potatoes, which are even better for the diabetic than gluten bread.

The exclusion of sugar, as I have told you, is absolute, but there are some patients that cannot get along without some sugar; in such cases you can allow them to sweeten their tea, coffee and lemonade with glycerine.

Vegetables are permitted in the regimen of diabetes, and Bouchardat has always insisted on the disadvantages of an exclusively animal diet in this disease. Vegetables are useful because they give variety to the diet of the diabetic, and because they furnish a valuable element, potash, to the economy. Boussingault has, in fact, shown that one kilogramme of the following vegetables contains potash in the proportion here given, the figures indicating grammes:

Cabbage	2.6	Beets	6.8
Chicory	1.7	Potatoes	3.2
Turnips	3.7	Spinach	4.5
Carrots	2.5		

Taking, then, as your guide the foregoing tables, you will order spinach, sorrel, beans, lettuce, cabbage, asparagus, celery, artichokes, dandelions, all the salads, etc. But you will forbid beets, carrots, and turnips, by reason of the sugar which they contain, and you will caution the patient to be chary of onions, leeks, and cooked artichokes. There remains the question of fruits, and in general they ought all to be proscribed. In fact, if you will refer to the analysis of Mayer, and which I place before you, you will see the large quantity of glucose which fruits contain, and with the exception of currants, they ought to be, as a rule, rejected.

PERCENTAGE OF SUGAR IN CERTAIN FRUITS.

Currants	1.50 to 18.00	Figs	10.00
Melons	7.50	Prunes	16.00
Raspberries	8.00 to 10.00	Dried prunes	42.00
Oranges	10.00	Dried figs	71.00
Cherries	10.25	Raisins	79.00
Peaches	10.50		

Such are the indications which will enable you to decide upon the diabetic rules applicable to diabetes. These rules should be followed to the letter, and for a long period, if not during the entire life-time. Often repeated analyses of the urine, will enable you to decide how far the patient may return to his ordinary fare, also to ascertain if your rules are rigorously carried out, the least enfraction of them always producing an increase of the sugar excreted in the urine. Moreover, it will be your duty to point to the patient the great importance of this strict regimen, by which you will be able in a great many cases to clear the urine of sugar, and in all, to obtain a marked amelioration.

But dietetic rules do not alone constitute the hygienic therapeutics of diabetes. We must add varied muscular exercises, to which I shall refer when I come to speak of gymnastics and massage, and which have a large share in the results of the treatment, by enabling us to fulfil the second part of the therapeutic problem which we have to work out, namely, how we may best forward the combustion of glucose existing in excess in the blood.

Original Articles.

A CASE OF UNUSUAL DEFORMITY OF BOTH HIP JOINTS.[1]

BY G. H. MONKS, M.D.

THE patient, F. M., is a young man of sixteen years. He came to me some months ago at the Carney Hospital, complaining of pain and stiffness in both hip joints, from which he stated he had suffered for about two years.

On examination of the hip-joints it soon became evident that some unusual pathological process had been at work. As the patient stands facing you (see Fig. 1), you will notice that he is apparently well nourished, and that his muscles as a rule are well developed. The right side of the pelvis is slightly higher than the left, and the right trochanter projects somewhat more than its fellow. At a point about two and one-half inches below the anterior superior spine of the ilium on the right side is a rounded projection; on the left side is a similar one, but less marked. These projections are both on a lower level than the trochanters. The muscles of the thighs are not well enough developed to be in keeping with the rest of the body. There is knock-knee on both sides, particularly on the left, and both feet are flat.

The eversion of the right foot shows that the thigh on that side is strongly rotated out: the left foot is also somewhat everted.

If the patient be turned to the side (see Fig. 2) the first peculiarity noticed is the flattening and almost complete obliteration of the lumbar curve. The distance between the lower margin of the thorax and the crest of the ilium is considerably shortened, a fact easily appreciated by the touch if not by the sight. The trochanter occupies a position too high up and too far forward to be natural, and this observation has been verified by comparative measurements of the same parts on normal bodies.

The axis of support appears, therefore, to be too far forward, and the back part of the pelvis to be somewhat depressed by the weight of the body resting upon

[1] Read before the Suffolk District Medical Society, October 30, 1886.

it. There is a marked hollow behind the trochanter and the nates are flattened and flabby. The appearance of the left side is much the same as that of the right.

Occasionally the heel of the right foot is slightly raised while the patient rests upon the ball of the toes. In walking, however, this will be more evident.



Fig. 1.



Fig. 2.

Fig. 1 shows that the right side of the pelvis is somewhat higher than the left, and that the right trochanter projects more than its fellow. The dotted lines represent the position of the iliac crests, the great trochanters, and the protrusions in the groin caused presumably by the displaced head of the bone. Note also knock-knee and eversion of foot.

Fig. 2 shows the flattening of the lumbar curve, the position of the great trochanter and the line of the iliac crest; also the depression behind the trochanter. The axis of the femur being farther forward than natural, the weight of the upper part of the body transmitted through the lumbar vertebræ, has depressed the back part of the pelvis and consequently obliterated the lumbar curve.

On looking at the patient from behind (see Fig. 3), the pelvis is here again seen to be tilted up slightly on the right side. The trochanters, particularly the right one, are prominent, and the back in the lumbar region and the nates are flattened so that their surfaces appear to be very nearly in the same vertical plane. (This last deformity is unfortunately not well shown in Fig. 3). The depression behind each trochanter is marked, and is even more so when the patient bends forward.

Now, when the patient lies upon the table, and an attempt is made to manipulate the thighs, it is found that the right hip is so rigidly fixed that it is only with the greatest difficulty that one can detect a movement between the thigh bone and the pelvis. The motion at the left hip joint, on the other hand, is somewhat freer, but that too is decidedly limited. On account of this rigidity the patient finds it impossible to lie down on the floor without assistance, or once there to stand up again. The projection before spoken of on the right side just below the anterior superior spine of the ilium we now find to be due to a rounded bony mass, quite smooth, and this is presumably the head of the bone. When the thigh is moved this mass can be felt, though only by the closest observation, to move with the femur. The presumption that this mass is the head of the femur is strengthened by the fact that a bony ridge of about the size of the femoral neck can be traced from it to the trochanter. The rounded projection on the left side is much easier to examine on account of the comparative mobility of the left hip joint. The bony mass causing the projection moves freely with the femur and is without doubt the head of that bone. The heads of the two bones are then considerably lower than the trochanters, a condition which renders highly probable the assumption that the necks have been the seat of some pathological process by which they have been weakened, thus allowing the heads to be borne down by the weight of the body.

The following are the most important measurements taken on the patient while on the table. From the symphysis pubis to the most prominent part of the right trochanter is eight and one-half inches, to the most prominent part of the left trochanter is only eight inches, thus showing that the right trochanter projects more than the left by a half inch. There is no practical difference in the length of the two limbs, as measured from the anterior superior spine of the ilium to the inner malleolus. The test line of Bryant's triangle proves the right trochanter to be one-fourth inch higher than its fellow. Nelaton's line is difficult to place on account of the tuberosity of the ischium being farther to the front than normal. About one-half inch of the right trochanter is above it, while the tip of the left trochanter just touches it.



Fig. 3.

Showing the tilting up of the pelvis on the right side, and the prominence of both trochanters, particularly of the right one. The flattening of the back in the lumbar region and up the buttocks is not seen so well here as in profile, but the depressions behind the trochanters are well marked.

The gait of the patient is very peculiar. He walks with a sort of waddling motion, the upper part of his body moving from side to side. More singular still is the gait as viewed from the side. If the patient be now carefully watched it will be seen that there is no apparent motion at the right hip-joint whatever, and that when the right limb is used the joints between the lumbar vertebræ have to do the duty of that joint. Just as the patient puts forward the right leg, then, the lumbar region may be seen (in profile) to curve backwards, and when he puts his foot to the ground this backward curve becomes straight once more.

Simultaneously with the bending backwards of the lumbar vertebræ the pelvis seems to fall slightly downwards behind and to rise in front, as though it were rotating around an axis represented by a line from one trochanter to the other. As this rotation progresses a transverse crease forms in the abdominal wall across the umbilicus, but whether this is due to the rising up of the anterior part of the pelvis or to

the sinking down of the thorax, as the patient leans forward to keep his equilibrium, is difficult to say. The left limb, however, appears to swing quite freely from the hip-joint, and there is therefore nothing peculiar in its motion.

In attempting to account for the deformity just described, it is fair to assume that the head of the bone on the right side is not in the acetabulum, but is displaced forwards to a point where a new socket has probably formed about it, and that the condition on the left side is essentially the same, except that the process has not advanced so far.

Now, as the two thigh-bones are displaced forwards, the equilibrium of the pelvis is disturbed. The centre of gravity, instead of falling through these bones, falls behind them, and this means a sinking of the pelvis behind, and a corresponding flattening of the lumbar curve. At the same time, the patient throws the upper part of his body forwards to prevent falling.

The young man's history is briefly this: He was born in Germany, and came to this country with the other members of his family about one year ago. The lad is not very intelligent — a fact which would tend to weaken the value of many points in the history which he gives. The patient declares, and his statement is verified by his mother, that he was always perfectly well until within the last two years; that he could run, jump fences, and climb trees like other boys, and that he had never suffered any injury. No member of his immediate family ever had rheumatism or any trouble in the joints whatsoever.

The patient's first symptoms were pain and stiffness in the right hip, followed, in about three months, by the same in the left hip. These symptoms increased, and to get relief from the pain, he would stand, rather than sit, for, in sitting, flexion of the thighs would cause pain. Even now, he seldom sits in a chair. As the pain continued to increase, the patient took to his bed for five weeks, during which time his condition gradually improved.

When he got about again he would be now better, now worse, and so on, until the time I saw him. The constant use of electricity, probably by its beneficial effect on the muscles, has relieved him considerably. He declares that he is much better, and has been able to take light work.

The history of the case excludes at once the possibility of our having here to do with any form of *traumatism* (such as fracture, dislocation or separation of the epiphysis), or with any disease of the joints *resulting from affections of the nervous system.*

The deformity and the youth of the patient suggest a *congenital dislocation*, which has been overlooked; but a double congenital dislocation forwards must be extremely rare, if, indeed, it ever occurs, and with such a deformity from birth, how could the boy, until within a few years, run and jump fences as well as the other boys.

Dry caries (caries sicca), either with or without diastasis, would have been accompanied by more constitutional disturbance than this case has shown. The patient would have been confined to his bed for months or years, instead of for a few weeks. Moreover, caries could have hardly advanced so far as to cause the deformity noticed here, without suppuration, and there is now, and so far as I can judge, there has never been any sign of pus formation. The conclusion is, therefore, forced upon me that we have here to do with a case of *arthritis deformans.* The remarkable features are that this boy of sixteen years should have the disease at all, and that the process, once established, should advance to such a degree of deformity as we have seen.

The patient suffered in the beginning, and continues to suffer with pain and stiffness in the joints, and this history corresponds exactly with that of arthritis deformans. His family live in a damp cellar in an unhealthy part of the city.

Pathological specimens of the disease show that all sorts of unusual deformities may result, and that partial, or even complete luxations may occur. It is highly probable that, as has already been intimated, the heads and necks of the bones have been so affected by the disease, that the weight of the body has been able to depress the former by the yielding of the latter, and that the anterior rim of the acetabulum, likewise softened, and thus unable to resist the force of the head pressing against it, has gradually given way, and a dislocation, more or less complete, has resulted. That the dislocation is forwards, instead of backwards, is a mystery.

THE PURIFICATION OF DRINKING-WATER BY FILTRATION.[1]

BY PROF. WILLIAM F. SEDGWICK, MASS. INSTITUTE OF TECHNOLOGY BOSTON.

[PROFESSOR SEDGWICK began by explaining that he had been asked to say a few words upon filtration by way of introducing the subject, and also to show the micro-membrane filter exhibited last spring before the Society of Arts by the late Prof. Wm. Ripley Nichols. He proceeded substantially as follows: —]

Drinking-water is seldom or never free from organic matter. A good quality of deep-well water is probably as free as any other from it, and yet Frankland, by the method of biological examination (gelatine plate-cultures), found rarely more than ten microbes in one cubic centimeter of such water. The same quantity of water taken from the Thames at Hampton contained about one thousand microbes.

We shall probably not be far wrong in supposing the same to be true of drinking-waters generally. All contain more or less of organic matter, if not when first taken from the well or spring, certainly before they enter the mouth. Some of this matter is living, in the shape of bacteria, infusoria, diatoms, etc., and some is lifeless, being either dissolved or suspended. The entire quantity, however, in what is ordinarily called wholesome drinking-water — namely, that from springs, wells, rivers, etc. — is a very small percentage of the total volume of liquid. These waters are by no means necessarily to be condemned on that account, but are still to be regarded as perfectly wholesome.

There is, nevertheless, a *possibility* of danger in this organic matter, and hence the water-supply of a community must always be closely watched, and, if necessary, rarely, in times of epidemics, perhaps even abandoned altogether for a while. But this possibility, once recognized and constantly kept in mind, need not cause great anxiety. For example, the "Cochituate" is by no means free from organic matter; on the contrary, it contains abundant micro-organisms; there is

[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, October 13, 1886.

always a possibility of its acting as a carrier of disease germs, and yet we consider it a wholesome and trustworthy drinking-water. It might be improved by filtration, and since Pegan Brook has been purified, one source of serious danger has been removed; if others exist, they should be speedily corrected.

The reason why so much attention is paid to the microbes in drinking-water is not so much because they are proven to be disastrous to health, as that they belong to the same general category with the established germs of disease, and are, therefore, themselves suspected. Micro-organisms produce certain diseases, and micro-organisms are common in drinking-waters; hence it is, therefore, sometimes hastily concluded that drinking-water and disease yet go hand-in-hand. But so general a conclusion is not of necessity warranted by the facts. The micro-organisms in drinking-water are seldom the same as those present in disease, though the possibility of the presence of the latter must always be granted and kept in mind.

If, instead of asking what things, lifeless or living, *may* flow into the pitcher from the tap when drinking-water is drawn, we inquire what *does* ordinarily come in, we find that various humble plants and animals, along with the smaller micro-organisms, are not wanting, but that the malignant forms are not discoverable; and since this matter goes into the human alimentary canal, as such matter has gone ever since mankind began to drink, we know from experience what, in the majority of cases, will follow, namely, no harm whatsoever. The plants and animals, microbes and micro-organisms, whether dead or alive, mild or malignant, will simply be digested or passed out. The human alimentary tract has been practised in just such work from the time when our savage ancestors first slaked their thirst in stagnant pools until now. Here and there a weakling may be overcome, an invalid affected, or a strong man, under special conditions, upset or destroyed, but the vast majority will drink and feel none the worse. It is even questionable whether the removal of all the micro-organisms from the drinking-water of an ordinary city would perceptibly affect the death-rate.

At the same time, when we speak generally, and of possibilities, it must be laid down as an axiom that the purer the water-supply, the greater is the safety of the citizen. We cannot easily get rid of all the organic matters in drinking-water, nor is this necessary, except from a theoretical point of view. Most of the microbes present are perfectly harmless, and if all were removed, there would still be abundant opportunities for introducing them into the body through other channels.

There are, however, two ways in which organic matters in drinking-waters may be rendered harmless: 1, by removal (filtration); 2, by killing (heat). The latter is an easy, but not a sure method, since the spores of some microbes endure even prolonged boiling. Boiling is, however, a useful, simple, and inexpensive, though rough and imperfect method of protection. Filtration, formerly a mere straining, has, of late, aspired to *sterilize*, that is, to remove from the water all its living substances, however infinitesimal. In this event, the filtrate must be perfectly safe for drinking purposes, even the *possibility* of danger having been removed. Most filters do not claim such perfection, and most which do fail to reach it. The "Chamberland" filter is said to sterilize, and the micro-membrane filter invented by Breyer, of Munich, is claimed to do the same.

[The speaker then exhibited a micro-membrane filtering apparatus imported and previously exhibited by Professor Nichols. An ultra-marine mixture (in water), a fluid which filters with great difficulty, was shown to be perfectly decolorized by the apparatus.]

The essential part of this is a filtering surface of finely-divided asbestos. This is made by grinding the mineral in water, then mixing it with crystallized carbonate of calcium, grinding again thoroughly, and adding hydrochloric acid. The sharp edges of the crystallized carbonate seem to penetrate the asbestos, splitting it up — a process which is carried further by the escaping bubbles of carbon dioxide. In this way, fibres of extraordinary fineness are obtained, and, by other steps, made into filtering sheets or "lamels," which are easily arranged for filtration. Professor Nichols had made some experiments with the filter, but was not convinced that it would sterilize, although he granted its great perfection.

The speaker closed by affirming his full agreement with Professor Nichols in the following statements taken from a paper by the latter, upon the micro-membrane filter, read before the Society of Arts in April, 1886:

"Personally, I am quite content with the efficacy of the filter, and I think, in its larger forms, with attached reservoir, it may serve a good purpose. Of course, in this country, these small filters, which take an hour to filter a quart of water, would be quite useless. No one will wait fifteen minutes for a glass of water to filter through; he would rather take his chances for a few more microbes. I do not lay so very much stress upon this matter of "germs" in the present connection. First, because there is no proof that the number of microbes bears any direct relation to the wholesomeness of the water; second, because a water furnished or used for domestic supply ought not to contain *dangerous* organisms requiring removal; third, because, even if it were possible to obtain a germ-free water by carefully sterilizing the whole apparatus, and receiving the filtered water in sterilized vessels, such water would not be obtained in the ordinary use of the apparatus."

REPORT ON DISEASES OF CHILDREN.

BY T. M. ROTCH, M.D.

EXAMINATION OF URINE IN CHILDREN'S DISEASES.[1]

Dr. Alexandra J. Eckert, house-physician to the Elizaretinskaia Infirmary for Children, in St. Petersburg, states that she has made fifteen hundred analyses of urine in one hundred and four children, in order to study its changes under the influence of various affections attacking the child's organism, and to determine quantitatively the albuminoid losses sustained by the system in febrile albuminuria. The albumen in the urine was estimated after a method based on Heller's test and introduced simultaneously by Professor Roberts of Manchester, and Dr. J. J. Stolnikoff, of St. Petersburg, (see Professor V. A. Manassein's Sbornik Rabot, Part II, 1877.)

The author divides her cases into four groups. The first group consists of, (*a*) seven cases of typhus fever in children between the ages of six and fifteen: in this group, during the febrile period the urine was

[1] London Medical Record, October 15, 1886. Vratch, Nos. 44, 45.

scanty, high-colored, and of a high specific gravity; in five of the seven cases albuminuria lasting from four to twenty-one days was present, the quantity of albumen varying from 0.024 to 0.502 per cent.: it rapidly disappeared with the advent of pyrexia. (*b*) Nineteen cases of enteric fever, between the ages of three and fourteen. In fourteen of them albumen was found during the febrile period from four to fourteen days, its quantity varying from mere traces to 0.7 per cent. (*c*) Two cases of relapsing fever eight and eleven years old: no albuminuria was observed. (*d*) Three cases of intermittent fever between the ages of nine and twelve years; no albuminuria.

A second group included, (*a*) croupous pneumonia in twelve patients aged from eight months to twelve years, with scanty, highly-colored, and very dense urine during the febrile stage. In ten of them from a mere trace to 0.104 per cent. of albumen was found at the time of high temperature, for from four to seven days. (*b*) Catarrhal pneumonia in two patients aged seven and eight; in the former, who had fever of an intermittent type and ultimately recovered, the urine was scanty, had a high specific gravity and did not contain albumen; in the latter, 0.064 per cent. of albumen appeared shortly before his death. (*c*) Pulmonary tuberculosis, in four fatal cases between the ages of two and a half and ten years; albuminuria was present in all. (*d*) Chronic pneumonia one case, and exudative pleurisy one case; no albuminuria.

A third group consisted of, (*a*) measles, two cases, aged three and ten, with albuminuria of one to three days' duration, the amount varying from 0.012 to 0.067 per cent. (*b*) Diphtheria, faucial; two cases aged six and ten, with albuminuria of one to five days' duration, varying from 0.024 to 0.144 per cent. (*c*) Scarlet fever, six cases, aged three and a half to eight years; in five, albuminuria was observed and that in two forms (1) a febrile one during the efflorescence, of one to seven days' duration and with 0.012 to 0.044 per cent. of albuminuria, (2) a nephritic one, in the third week of the disease, of a month or longer duration, with 0.012 to 0.244 per cent. of albumen. (*d*) Parenchymatous nephritis, eight cases; in seven, albuminuria of one to six weeks' duration was found with 0.024 to 0.164 per cent. of albumen.

The fourth group consisted of, (*a*) a case of catarrhal angina with erysipelas, no albumen; three cases of tonsillitis 0.052 per cent. of albumen in one; four cases of intestinal catarrh 0.052 to 0.184 per cent. in one. (*b*) Non-febrile internal diseases, one each of scurvy, aortic stenosis, anæmia, cerebral tumor, dyspepsia, chorea, icterus, etc.; between the ages of five and fourteen years; no albumen, but a trace of albumen in a case of syphilitic interstitial hepatitis. (*c*) External affections in twenty cases between the ages of nine months and sixteen years: no albumen was detected, in eczema with nettle-rash, femoral osteotomy, fracture of the femur, and rheumatic synovitis of the knee. Albumen was, however, present in a fatal case of extensive burn, 0.184 per cent.; also of multiple lymphoma, 0.064 per cent.; rachitis with bed-sore, 0.008 to 0.124 per cent.; it was observed also in three of eight cases of caries, its quantity varying from traces to 0.024 per cent. Finally, albumen, from 0.024 to 0.244 per cent. was detected in three cases of vesical stone and cystitis, its source of course not being in the kidneys. The general conclusions reached by the author are given as follows:

1. All affections considerably disturbing the nutrition of the child's system and running their course in association with a high febrile state, give rise to albuminuria in a large majority of cases. 2. The characteristics of albuminuria are usually dependent upon the intensity of the morbid process and the duration of the febrile period. 3. As a rule, the albumen rapidly disappears after abatement or cessation of the fever. 4. Non-febrile affections, as well as those accompanied only by a slight, fleeting, febrile movement, seldom give rise to albuminuria of any considerable degree, and when they cause albuminuria, it occurs only as a phenomenon of very short duration.

ALBUMINURIA IN THE YOUNG.[2]

Dr. Eichhorst states that albuminuria frequently occurs during the period of growth; he has observed many cases which could not be attributed to any local affection, but which were evidently the consequence of a too rapid and precocious development of the body. The urine contained a more or less considerable quantity of albumen. The albuminuria preceded, in some cases, the first symptoms of general disturbance of health, by several hours or days, and ceased with such disturbance. The urine was of a pale yellow color and in only one case were hyaline casts and a few fat globules found. The attacks of albuminuria were repeated at intervals of weeks or months. The duration of each attack varied from one day to a week. The prognosis was favorable. Tonics and a long residence in the country was all the treatment required. The symptoms, according to Eichhorst, which accompany this kind of transitory albuminuria were:

1. Stiffness of the joints, lassitude, inaptitude for work, loss of memory. 2. Irritability, extreme mutability of character, and excitability. 3. More rarely, headache, vomiting, muscular tremors, and epileptiform convulsions of short duration.

[In this connection the investigations of Leroux, a summary of which is to be found in the Report on Children, *Boston Medical and Surgical Journal*, April 29th, 1886, will be of interest].

ACUTE YELLOW ATROPHY OF LIVER.[3]

Professor Monti, of Vienna, reports the following case: A boy, four years old, with a good family history, was taken sick with purpura December 4, 1884. The disease ran a favorable course, and by the 15th of March the child was entirely well. On the 6th of April, the child began to have nausea and vomiting. Temperature 38.5°, pulse 100, respirations 30; slight icterus; decided enlargement of the liver. Spleen normal; urine small in amount and icteric, and no return of the purpura.

The icterus became each day more pronounced, while the liver grew rather smaller. Vomiting next became a prominent symptom, and the child rapidly emaciated. On the 18th of April cerebral symptoms appeared, restlessness, delirium, and occasional unconsciousness. The temperature went up to 41.5° C., the icterus became still more marked, and the liver very little larger than normal; the spleen then became enlarged, and on the 22d of April, small, hæmorrhagic spots appeared on the skin, and there was epistaxis. The urine was small in amount, dark-colored from

[2] London Medical Record, October 15, 1886.
[3] Archiv. f. Kinderh., VII, 5, 1886. Schmidt's Jahrb., No. 10, 1886.

bile, and contained albumen, leucin, tyrosin, and hyaline casts.

On April 23d, there was coffee-ground vomiting and collapse. The temperature sank to 38.5°, the pulse was very weak, 130, and in the afternoon death took place after an eclamptic attack.

The autopsy gave simply the appearances of acute yellow atrophy of the liver. The peculiarities of this rare case lay in the connection of the attack of purpura with the liver atrophy, and the ease with which the daily decrease in size of the enlarged liver could be determined by palpation and percussion. The autopsy also revealed no complicating disease which could account for the high temperature which appeared when cerebral symptoms were first noticed.

SUBCUTANEOUS EMPHYSEMA.[4]

In the "Proceedings of the Vilna Medical Society," No. 12, 1886, a brief report is made by Dr. Roman M. Przybylski, of Vilna, of a rare case in a child, who, for a long period, suffered from cough, and then began to swell. On examination, there was found subcutaneous emphysema over the whole body, the skin being of a normal color and otherwise healthy. According to the author's theory, the occurrence of this phenomena may be explained by the bursting of some pulmonary alveoli in the presence of an extensive adhesion between the costal and pulmonary pleuræ, the air entering into the anterior mediastinum, and hence penetrating through the jugulum sterni into the subcutaneous alveolar tissue of the whole body. No pneumothorax was present. A similar case in a child has been reported by Wittman.[5]

CYANOSIS OF NEW-BORN AND ANILINE INK.[6]

In view of the cases of chromium poisoning reported at the June meeting of the Massachusetts Medical Society, the following cases are of interest: In July, 1885, four or five newly-born children in the Marylebone workhouse were found to be cyanosed, and suffering from very peculiar symptoms. Nothing could be detected to account for these phenomena, and after a few days, the children became quite well. No similar cases occurred until the following December, when seven children were attacked with analogous symptoms. After some time, one of the nurses discovered that these attacks had come on when a new supply of napkins was served out, and, on examining the ink with which they were marked, it was found to contain chloride of aniline. As soon as the napkins had been washed once or twice, the symptoms disappeared entirely. A newly-marked napkin was then applied experimentally to a healthy infant, and at once a train of symptoms arose, similar to those previously observed.

CHOREA MINOR FROM NASO-PHARYNGEAL REFLEX.[7]

Dr. A. Jacobi contributes an article on this subject, in which he states that bad habits are just as well the results of physical changes in the structure of the nerve-centres or their outlying provinces, as morbid changes in the functions of the coarser viscera spring from their anatomical alterations. He alludes to a number of convulsive movements of the face, winking, frowning, twitching of the angles of the mouth, and drawing up of the muscles of the nose, the mild cases sometimes improving spontaneously in the summer months, and getting worse in winter. Besides these anomalous movements, there are others which direct attention to the primary cause of the disorder, such as frequent snuffling and a short, hacking cough, the result of a voluntary effort. In these cases there is pharyngeal congestion, which is observed to ascend in the direction of the posterior nares. The mucous membrane of the nose is congested and swelled, and there is thickening and hyperæmia of the cavernous tissue, particularly of the lower concha. Nasal catarrh is reported as frequent in these cases. The local cause of this local or partial chorea is found in the abnormal condition of the nasal and pharyngeal mucous membrane, with its influence on the terminal sensitive ends of the trifacial nerve. The author assumes that the motor branches and terminal ends of the same nerve are first affected, and before any other nerves participate in the reflex symptoms. The motor branches of the trifacial supply the masticatory muscles, the temporal, masseter, and pterygoid, the tensor of the velum palatinum, the mylohyoid, the anterior belly of the digastric muscle, and the tensor tympani; and it is these muscles which are brought into abnormal play in the reflex symptoms described.

INFANTILE APHASIA.[8]

Professor Bernhardt, in an article on this subject, sums up as follows:

(1) Only about ninety cases of this disease have been recorded.

(2) Its etiological factors are nearly identical with those producing the affection in the adult, with especial reference, however, to the characteristics of childhood. The principal causes are reflex conditions after indigestion, entozoa, psychical irritation, infectious diseases, acute and chronic brain affections.

(3) It is chiefly a symptom of cerebral infantile paralysis.

(4) Hemiplegia does not necessarily exist with the aphasia.

(5) The affection may disappear spontaneously, especially after prudent and systematic physical exercise.

(6) The nature of the cerebral lesion in cases of aphasia existing since birth is not known.

[In this connection, a case of aphasia from fright is of interest; for description, see "Report on Children," *Boston Medical and Surgical Journal*, December 17, 1885.]

HYSTERICAL HEMIPLEGIA AND APHASIA.[9]

At a recent meeting of the Paris Biological Society, M. Gayot reported the case of a child four years of age, and previously free from any nervous symptoms, who, after being violently agitated, was seized with hemiplegia of the right side and aphasia; the motor and sensory faculties were also impaired. In a few days the hemiplegia disappeared, but returned the next morning. The following night, the sensory and motor faculties regained their normal activity, and the child's health has since been good. Each return of hemiplegia was accompanied by aphasia. Both parents were of an excessively nervous temperament.

[4] London Medical Record, October 15, 1886.
[5] A large series of cases is referred to in Dr. R. Neale's "Medical Digest," Sect. 657, 2, 3, 4.
[6] Lon. Med. Rec., October 15, 1886. Brit. Med. Jour., February, 1886.
[7] American Jour. Med. Sciences, April, 1886.
[8] Deutsche Med. Zeitung. London Medical Record, October 15, 1886.
[9] London Medical Record, October 15, 1886.

DIAGNOSIS OF INFANTILE DISEASES.[10]

In a recent number of *L' Union Médicale du Canada*, Dr. Bradley gives the following summary of points on the diagnosis of disease in infants:

(1) Congestion of the cheeks, excepting in cases of cachexia and chronic disease, indicates an inflammation or a febrile condition.

(2) Congestion of the face, ears, and forehead of short duration, strabismus, with febrile reaction, oscillation of the iris, irregularity of the pupil, with falling of the upper lids, indicates a cerebral affection.

(3) A marked degree of emaciation, which progresses gradually, indicates some sub-acute or chronic affection of a grave character.

(4) Bulbar hypertrophy of the fingers and curving of the nails are signs of interference in the normal functions of the circulatory apparatus.

(5) Hypertrophy of the spongy portions of the bones indicates rachitis.

(6) The presence between the eyelids of a thick and purulent secretion from the Meibomian glands may indicate great prostration of the general powers.

(7) Passive congestion of the conjunctival vessels indicates approaching death.

(8) Long-continued lividity, as well as lividity produced by emotion and excitement, the respiration continuing normal, are indices of a fault in the formation of the heart or the great vessels.

(9) A temporary lividity indicates the existence of a grave acute disease, especially of the respiratory organs.

(10) The absence of tears in children four months old or more suggests a form of disease which will usually be fatal.

(11) Piercing and acute cries indicate a severe cerebro-spinal trouble.

(12) Irregular muscular movements, which are partly under control of the will when the patient is awake, indicate the existence of chorea.

(13) Contraction of the eye-brows, together with a turning of the head and eyes to avoid the light, is a sign of cephalalgia.

(14) When the child holds his hand upon his head, or strives to rest the head upon the bosom of his mother or nurse, he may be suffering from ear disease.

(15) When the fingers are carried to the mouth, and there is, besides, great agitation present, there is probably some abnormal condition of the larynx.

(16) When the child turns his head constantly from one side to the other, there is a suggestion of some obstruction in the larynx.

(17) A hoarse and indistinct voice is suggestive of laryngitis.

(18) A feeble and plaintive voice indicates trouble in the abdominal organs.

(19) A slow and intermittent respiration, accompanied with sighs, suggests the presence of cerebral disease.

(20) If the respiration be intermittent, but accelerated, there is capillary bronchitis.

(21) If it be superficial and accelerated, there is some inflammatory trouble of the larynx and trachea.

(22) A strong and sonorous cough suggests spasmodic croup.

(23) A hoarse and rough cough is an indication of true croup.

[10] London Medical Record, October 15, 1886.

(24) When the cough is clear and distinct, bronchitis is suggested.

(25) When the cough is suppressed and painful, it points towards pneumonia and pleurisy.

(26) A convulsive cough indicates whooping-cough.

(27) A dry and painless cough is sometimes noticed in the course of typhoid and intermittent fever, in difficult dentition, or where worms are present.

Reports of Societies.

THE NEW YORK ACADEMY OF MEDICINE.

STATED meeting, October 21, 1886.

DR. FRANCIS DELAFIELD read a paper on

PULMONARY EMPHYSEMA.

Having given a general statement of the varieties, causes, symptoms, physical signs, prognosis and treatment of emphysema, as set down in the standard text-books, he remarked that the student, when he came to observe for himself, was often surprised to find that the characteristics of the affection, as it actually occurred in practice, did not correspond with the description given by the great mass of authorities. He would find that it necessarily arises in connection with bronchitis, and that playing on wind-instruments was not one of its common causes. He would find that it did not afford such immunity from phthisis and pneumonia as was commonly taught; and if he made autopsies, he would find that the dilatation of the air-vesicles and air-spaces was by no means always proportionate to the severity of the symptoms that had been present during life.

It was true that chronic bronchitis and attacks of asthma were frequent enough, yet there were other cases in which such conditions were entirely absent, and substantive emphysema was essentially different from what the classical descriptions of it would lead us to believe. It was, therefore, important to decide what we really do know, and what we do not know about the disease. It was well, on the whole, to divide the varieties, according to the recognized classification, into the inter-lobular or interstitial, and the vesicular forms, and to divide the latter into senile, lobular, and substantive.

Senile emphysema was due simply to a senile change in the parenchyma of the lungs; and when it was present there was no obstruction to the passage of blood through the lungs, and no dilatation or hypertrophy of the right side of the heart. Chronic bronchitis was often present, but the affection was not severe, and of no very grave import. In some instances, substantive emphysema commenced in the earlier portion of life, and as the patient grew older, senile emphysema occurred also. It was not always easy to distinguish between the two; and yet the distinction was very important, for while substantive emphysema was a very serious affection, the senile variety, as had been mentioned, was not.

Dr. Delafield then went on to say that substantive emphysema was, in reality, a form of pneumonia. It was, in fact, an inflammation of the same type as that which so often attacks the endocardium, the arteries, the kidneys, and the liver. The walls of the vesicles were first attacked, and while some of them became

thickened, others became thin. The dilatation, both of the vesicles and the air-spaces, varied in different cases, and was by no means proportionate in many instances to the severity of the symptoms present. In fact, many of the cases were overlooked at autopsies, because there was no dilatation of the air-spaces visible to the naked eye. Later on the emphysema spread, and attacked other parts of the lungs, including the epithelial cells lining the air-spaces, and the mucous membrane of the bronchi. The pleura also became thickened, numerous adhesions formed, and the whole condition was, in short, that of interstitial pneumonia. In the milder cases, there was but little disturbance of the circulation of the blood, but in the severe cases this gave rise to the worst symptoms. The right ventricle of the heart became hypertrophied and dilated, and venous congestion and dropsy followed. The secondary symptoms were, indeed, the same as those of valvular cardiac disease. Having referred to the various complications liable to arise, he stated that this affection was very frequently met with in New York, coming on, as a rule, in individuals of from forty to forty-five years of age. Hereditary influences were marked. The same causes were active in producing it, as in the case of chronic endocarditis, arteritis, nephritis, etc. It was of more importance to recognize the cases of moderate severity than the very bad ones, because in the latter, comparatively little could be done in the way of treatment. In the moderate cases there was no change in the shape of the thorax, though, in old and aggravated cases, the barrel-shaped chest was not infrequently present. The pulmonary resonance might remain unaltered for a considerable time.

Having spoken in detail of the physical signs present, Dr. Delafield said that the emphysema might continue for years without giving rise to any rational symptoms. The condition, however, could be generally recognized by taking into consideration the age and general condition and tendencies of the patient. There were other cases in which the presence of Bright's disease or cardiac trouble caused the emphysema to be lost sight of. The dyspnœa, at its worst, was constant and extremely distressing. In the bad cases there were also severe cough and venous congestion, followed by general dropsy.

The disease might pursue a number of different courses. In the first place, a patient who had suffered a long time from winter cough, and was always a little short of breath on making exertion, would at length develop spasmodic asthma. Then would follow increasing dyspnœa, loss of flesh and strength, venous congestion, dropsy, and death. Another class of patients would be apparently entirely well, except when they had an attack of acute bronchitis. After a time, however, venous congestion, albuminuria, and dropsy would ensue, as in the preceding variety. Still another class would suffer for years from spasmodic asthma before the evidences of emphysema would show themselves. Finally, there was a class of cases in which the symptoms were very slight for a long time, when venous congestion and the other grave symptoms would suddenly become developed. The behavior of the affection was, therefore, on the whole, very like that of the atrophic form of chronic Bright's disease.

In speaking of the treatment, he said that the same general rules as regards hygienic surroundings, climate, mode of life, etc., which had a favorable effect on the progress of other affections of the same class, such as chronic Bright's disease, etc., were applicable in emphysema. It was a question of some importance whether the dyspnœa and asthmatic attacks which so frequently characterized it were not due, in reality, to a contraction of the arteries and capillaries, since it was found by experience that many of the drugs the most serviceable in relieving these conditions were those the physiological effect of which was to produce a relaxation of the walls of these vessels.

The conclusions arrived at by Dr. Delafield were somewhat as follows: Emphysema is not a chronic local disease due to excess of inspired air over expired air, or to fatty degeneration, but a chronic inflammation of the lungs; nor is the dilatation of the air-cells and air-spaces an essential part of the affection. The result of this inflammation is such an irregular thickening and thinning of the walls of the air-spaces as would naturally occasion the dilatation of some of them. The dyspnœa and general venous congestion are not due simply to the dilation, but to the contraction of the pulmonary bloodvessels. Excessive bodily exertion is not the cause of emphysema. In the treatment, the indications are to delay the progress of the chronic inflammation and to overcome the contraction of the bloodvessels present. Chronic bronchitis is, of course, to receive proper attention. [At the conclusion of the paper Dr. Delafield had exhibited, by the aid of the magic lantern, a number of sections of lungs taken from different patients illustrating the points referred to in it].

Dr. E. Darwin Hudson, Jr., said that the author of the paper had given his ideas of emphysema from a pathological point of view. Personally, he was more accustomed to regard it in a clinical aspect, particularly in connection with the physical signs to which it gave rise; although he had had the opportunity of studying the disease to a considerable extent in the dead-house also. His post-mortem experience, however, was, of course, limited when compared with that of Dr. Delafield. He had always looked upon the account of emphysema given by Waters, of Liverpool, as affording a very definite and accurate idea of the affection. In his paper, Dr. Delafield had described other diseases, more particularly interstitial pneumonia, with emphysema. He (Dr. Hudson), was still of the opinion, however, that we had to take emphysema as a distinct type, and that it consisted essentially in rarefaction of the pulmonary structure, as described in "Reynold's Practice" and other standard works. The clinical history of the disease had to be taken into consideration, as well as the pathological conditions found after death.

It was very common for women at the climacteric period to become obese and develop emphysema, with the barrel-shaped chest so often described as characteristic of the affection. Hence the condition could hardly be due to alteration in the anatomical structure of the lung; though no doubt this was the case in other instances. The results obtained from Voldenberg's apparatus, and more recently from Ketcham's pneumatic cabinet, throw considerable light on the nature of emphysema; which was shown to be a disease in a large number of cases in which there was a loss of elasticity and resiliency on the part of the air tubes and vesicles. It was no doubt true that in a certain number of instances that gouty diathesis was present, with interstitial disease of the kidneys, or

other characteristic lesions; but there was a very large number of other cases in which the affection was purely mechanical.

DR. C. HEITZMAN said it was now fifty years since Rokitansky gave to the profession an accurate knowledge of emphysema, and that ever since then its pathological and clinical characteristics had been well known. It seemed to him that either Dr. Delafield had not seen a pure case of the affection, or had not demonstrated one. The sections which he had exhibited this evening were certainly not specimens from simple emphysema. As Dr. Hudson had stated, they were emphysema combined with interstitial pneumonia. It was, indeed, not a primary, but a secondary disease. He had in his possession an ample number of specimens taken from cases of pure emphysema, and they are altogether different from those which Dr. Delafield had shown. As to the pathology of the affection as interpreted by Dr. Delafield, namely, that it was due to contraction of the bloodvessels, he did not see why we should go to something which we could not prove for an explanation of the trouble. For himself, he was content to believe in the old view of the affection.

DR. DELAFIELD said that the ideas which he had tried to set forth in the paper were those which he had formed from a somewhat extended study of the disease both during life and after death. The treatment which was found most effectual in emphysema was certainly fully compatible with the views which he had advanced.

DR. VAN ZANTVOORD said that he had at present under observation two advanced cases of emphysema which seemed to him to bear out the statement of the author of the paper that the affection was of great gravity in many cases; and since he had been in practice he had found out that many of the teachings in regard to emphysema which he had heard when a student were not borne out by the facts. He then spoke of the great value, according to his experience, which caffeine had as a cardiac stimulant in these cases. The right heart was frequently embarrassed, and venous congestion was apt to occur long before it could be caused by tricuspid trouble, or at least before this could be recognized by the physical signs.

DR. DELAFIELD said that he thought caffeine a useful drug. It appeared to stimulate the right side of the heart more than the left side; and the same was true of convallaria. Just as was the case in pneumonia, it was therefore indicated to stimulate the right heart in emphysema.

The President, DR. A. JACOBI, spoke of the value of the iodides, and said that the benefit which was afforded by them could only be explained on the ground that they acted as absorbents.

DR. F. A. CARTH said that of late calcium chloride, which had been proposed a long time since in this connection, had been steadily growing in favor for the purpose of causing absorption of connective tissue products. He referred to the value in emphysema of remedies which relax the muscular coat of the bloodvessels, and said that he thought this had a direct bearing on the subject of the paper. For instance, the prompt relief afforded by nitrite of amyl would seem to indicate that the seat of the trouble was in the bloodvessels; for if the dyspnœa were due simply to dilatation or to the presence of mucus in the air-vesicles, one could hardly account for the favorable action of this remedy.

DR. DELAFIELD said that he agreed with the President that the iodides were among our most valuable drugs in emphysema, and its action might well be supposed to be due to their effect on the bloodvessels, because it was a recognized fact that one of their effects is to relax the swollen bloodvessels. Thus, iodide of potassium was given in cardiac disease for its effect on the small arteries and capillaries. Another drug of the same class which was of great value was chloral hydrate, which acted in a similar manner. Large doses of chloral were extremely useful in acute attacks of dyspnœa, and small doses in chronic dyspnœa.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

MEETING October 13th, 1886.

The meeting was called to order by the Secretary in the absence of the Chairman, and on motion, DR. V. Y. BOWDITCH was elected Chairman, *pro tem.* The reading of the records of the last meeting, relating to the subject of the Physical Training of Children in our Schools, was omitted.

The Secretary read a letter from Prof. Raphael Pumpelly, of Newport, in which he expressed his deep regret that an unforseen accident would prevent him from attending the meeting as he had expected to do.

PROF. T. W. SEDGWICK read an essay upon

THE FILTRATION OF POTABLE WATERS, WITH REFERENCE TO THE ELIMINATION OF ORGANIC GERMS.[1]

The speaker considers the quality of drinking-water a matter of great importance, but seems to incline to the opinion that many of the impurities in the water we drink, though objectionable to sight, taste, and sentiment, are not directly the cause of serious disturbance to the human organism. A general description of the essential composition of any appliance for the filtration of water, was followed by the exhibition of the Micro-membrane Filter, which was in practical operation in a solution of ultramarine, from which it delivered a filtrate of such purity that it was impossible to tell it from the filtered Cochituate water which had not been stained with this coloring matter. The meshes of asbestos composing the filter were of such a degree of minuteness that the small particles of coloring matter were entirely separated from the water, and a clear filtrate was obtained. [For a more detailed description of the Micro-membrane Filter, see Report of the late Prof. W. R. Nichols, in Proceedings of the Society of Arts, of the Massachusetts Institute of Technology, 1885–86.]

The Chairman called upon DR. S. W. ABBOTT, Secretary of the Massachusetts State Board of Health, who responded as follows: There are two things to be borne in mind in the study of filtration of water; one relates to the well-being of the consumer, and is of use only as it modifies the actual condition of the water; while the other relates to the financial success of the company manufacturing the filter. Filters as now made, are all more or less defective, and accomplish the ob-

[1] See page 470.

jects for which they are manufactured with more or less completeness. If we could have a filter which would adequately protect the consumer of the water against the contamination which may, and too frequently does exist in drinking-water, we should have a good thing. A filter is a thing which is the subject of many erroneous ideas on the part of the public. All filters containing charcoal, silica, etc., will remove a certain amount of dirt from the water, and the popular idea seems to be that thereby they actually protect the public from the effects of contaminated water. This is a positive mistake, but many people are firmly persuaded that filtration transforms an injurious water-supply to a wholesome one.

Thus we were recently treated to the authoritative statement from the pen of a clergyman not more than twenty miles from Boston, that if a certain filter made by a certain manufacturer had been employed in the town of Plymouth, Pa., in which there recently prevailed a frightful epidemic of malignant fever, causing more than a thousand deaths, not one person would have died from the disease. We cannot accept such statements as these, and for the same reason we cannot put reliance upon any appliance for the mechanical purification of drinking-water until it is proved to do more than any filter is now doing. In regard to the micro-membrane filter it must be remembered that this is a new instrument, and it might not do so good work after a certain period of use, as it now does. If it could be enlarged, it would seem to offer the promise of a really good and serviceable filter. It looks as if it might exclude bacteria. If any form of filter could be devised which might be applied to the water at its source of supply, instead of at the end of the service, it would be a vast improvement over any present system.

Dr. J. G. Blake said that he was glad to be able to testify to the efforts on behalf of the Water Board of the City of Boston toward improving the quality of the water-supply. There is no question that the character of the water furnished to the citizens is now much better than formerly. The subject of filters is a broad one, and much misapprehension doubtless exists upon their design and usefulness. A filter is no more than a strainer, and will do the mechanical work of a more or less perfect strainer, and that is about all it will do. The ordinary filter is much too small for useful service, and can do only imperfectly the duty of separating the extraneous matters in water, as is usually seen in the action of most filters. The amount of filtering material is ordinarily far too small to properly strain out the foreign substances or to furnish even an approximately pure water. If the micro-membrane filter can be made practicable and be constructed cheaply, it would seem to be a good thing.

Mr. Desmond Fitzgerald, of the Cochituate Water Board, was called upon by the Chairman, and responded by saying that he was much interested in the subject before the meeting, and would gladly add to the knowledge of the matter if it were in his power. The subject of the purification of our drinking-water is one which attracts the attention of the public, as is evidenced by the size of the present assembly. There is one remarkable thing about the whole question of sanitation, which is, that it is only since the time that science has taken the subject in hand that there has been any real improvement in the means of furnishing pure water to urban populations for domestic purposes. It is only since scientific men have devoted their energies to the accomplishment of better sanitary conditions that there has been an appreciable diminution in the death-rate from any of the well-known epidemic or infectious disorders which affect the human race. From the period when sanitation became an established science, there has been a steady improvement in the public health. There is no question that much of the epidemic disease in London was directly or indirectly traceable to the old wells which were formerly the sole water-supply of the city for domestic purposes.

The whole question of the filtration of water will resolve itself into two propositions. First, does it pay? Second, can the various impurities in water be removed by this means?

Can filtration remove the color from impure water? Can it abstract the albumenoid, ammonia and other chemical contaminations? Until a filter can be produced which shall answer these demands, this appliance will not come into general use. In England much of the water-supply for large towns is taken from rivers, and previous to being diverted into the service-pipes, the water is treated with substances which chemically remove much foreign matter which would otherwise pass into the domestic supply. With respect to the micro-membrane filter, the question to be asked is, will it clog? will it remove chlorine? will it still continue to remove these impurities after a period more or less long of active service? At present all forms of domestic filters are simply strainers. We have not arrived at perfection in the manner of distribution of water-supply, and are farther still from the practicable and reliable means of its purification. What we want is to get at the way to deliver to a city of the size of Boston a supply of pure water every day. Filtration to be most effective should be conducted in such a manner that the water may pass slowly through the filtering medium, and thus allow the detention of deleterious matters. Rapid filtration is not in accordance with the principles of perfect separation of impurities.

Dr. Blake asked the probable cost of filtration of service water on a large scale. Mr. Fitzgerald replied that the cost would not probably be so large as to interfere with its practicability, if a useful method could be devised.

Prof. Geo. F. Swain, of the Massachusetts Institute of Technology, being introduced by the Chairman, said that it is not necessary to remove all the germs from the drinking-water, even if this were possible. The place for the removal of organic matter is not at the delivery of the water in the house of the consumer, but it is at the source. The dirt in the state of mechanical suspension can be removed by a simple filter at the point where the water is drawn for use. In regard to filtration on a large scale, it is simply straining, and not filtration in any proper sense of the word. Prof. Swain then described a new appliance for the purification of water for domestic purposes as follows: At the request of the manufacturer, who is unfortunately unable to be present this evening, I will briefly explain the construction and operation of the Diamond Filter. This filter is intended to be attached directly to the supply-pipe, taking the place of a faucet, and it consists of a cast-iron enamelled cylinder, to which a top is screwed, the water entering at the bottom and passing out at the top. The filtering material consists of two layers of quartz sand with

an intermediate layer of bone charcoal, closely packed, between two brass gratings to which are soldered screens of fine brass wire. The area of cross-section of the filter being very much larger than that of the inlet-pipe, the velocity of the water through the filtering medium is very much reduced, and the coarser particles settle below the lower grating or are caught on the wire-screen, while the finer ones are intercepted by the lower layer of quartz, very little even reaching the charcoal, which therefore needs renewal but seldom.

The principal peculiarity of the filter lies in the method of cleansing. It is divided internally by a vertical solid partition, and at the inlet a four-way cock is placed. The two upper openings are inlets, and the two lower ones outlets, leading to the discharge-pipe just below the inlet; the inlet and outlet on the right being connected with the right-hand half, and those on the left with the left-hand half of the filter. In ordinary working both inlets are open and both outlets closed, the water entering on both sides and ascending through the whole body of the filter; but if the filter is to be cleansed the outlet valve or cock is closed, and the four-away cock is turned so that the left-hand (upper) inlet, and the right-hand (lower) outlet are closed, the water passing in at the right, up through the right-hand half, down through the left-hand half, and out through the outlet, thus cleansing the left-hand half with *filtered water*, a point upon which the inventor lays great stress. By turning the four-way cock so that the right-hand inlet and left-hand outlet are closed, the course of the water may be reversed, and the right-hand compartment cleansed. Finally, if the water contains such finely-divided particles as to be but imperfectly filtered in the ordinary manner, the usual outlet valve may be closed and the water drawn from the lower discharge, after having been made to pass up and down through the filter.

The filtering material is renewed by unscrewing and removing the top.

The ordinary sizes of this filter, which is made by John G. Avery, in Spencer, Mass., are: No. 1, 4 in. diam., 6 in. high, 4 in. of filtering material, price $10; No. 2, 6 in. diam., 8 in. high, 6 in. of filtering material, price $15; No. 3, 12 in. diam., 15 in. high, 11 in. of filtering material, price $35. Very much larger sizes, however, have been made in special cases.

DR. HENRY J. BARNES spoke at some length of the desirability of securing the utmost degree of cleanliness in the fluid we use as a drink, and continued as follows: The desirability of filtering the water-supply of Boston has been greatly diminished, through the influence of members of this, and the parent Medical Society exercised chiefly through the valuable services of Dr. John G. Blake, a member of "The Commission of Investigation," since which the storage basins on the Sudbury River have been relieved of a large amount of vegetable mould, the decay and disintegration of which loaded the water with a great volume of organic matter. There has been little to complain of in the character of this water. At the present time these storage reservoirs are practically in the condition of "natural ponds," polluted to a greater or less extent by organic matter both animal and vegetable, dead and alive, washed into the basins with every rainstorm of magnitude, beside no inconsiderable amount of sewage which the praise-worthy efforts of the Water Board and engineer have failed to exclude. Nature strives and in a manner succeeds in neutralizing this banefu. influence by inhabiting the water with living organisms which devour the dead, prey upon the living, and transform organic into inorganic matter. Insects, fishes, mollusks, crustaceans, diatomes, and other species of animalcules each and all contribute to this end. And it is therefore undesirable, even if possible, to defertilize it at this point.

The bacteria of putrefaction, consuming oxygen, convert nitrogenous matter into plant-food. Vegetation inhaling carbonic acid and exhaling oxygen, renders it possible for animal life to exist.

The algæ selecting food from elements set free by decomposition, the spongilla subsisting upon animalcules and the spores of the algæ are but steps, which, if properly balanced, contribute towards purification. The balancing of these organisms, the ideal condition of a water-supply, is not to be hoped for where so many factors interfere with harmony. Unconsumed animal and vegetable material with the coagulæ of imperfectly decomposed soluble matter finds its way into the service pipes, for which we have no means of elimination except by filtration. It is here shown by the working of these filters to be considerable, and I do not believe its consumption conducive to the best hygiene. Nature strains it all out in converting surface water into spring water. If we can imitate her by artificial devices it is certainly desirable, and it does seem as if many of these machines do excellent service in this direction. While advocating their use, then, for the Sudbury and Cochituate service, I should deprecate the establishment of the notion that any are capable of freeing water from those noxious elements which go to make up six-sevenths of the pollution where sewage is discharged. The dissolved nitrogenous matter in urine, the almost completely soluble fæcal discharge must of necessity pass through any mechanical obstruction the mesh of which is capable of transmitting the liquid vehicle.

For this reason, water contaminated as in our Mystic supply, with human excreta, washings from tanneries, currying-shops, glue-factories, piggeries, etc., cannot be materially benefited by any of these appliances. By chemical treatment, a portion of the soluble matter can be precipitated, but of the great variety of methods employed, but few produce an effluent from sewage which should be discharged even into water not used for domestic purposes. One of the simplest and best plants for this purpose is employed at Stroud, Eng.,— and known as the "Bird process." Impure sulphate of alumina and sulphuric acid are the agents. The acid is added to powdered clay a few days before it is used, from a hopper regulating the discharge, into a current of sewage which goes to the first reservoir of deposit. From this receptacle it runs under another hopper discharging clay mixed with sulphuric acid to a second reservoir, and from thence over three lays of filtering coke. Analysis of the influent and effluent water shows in parts per 100.000 in weight, the water before treatment to contain 48.5 soluble and insoluble matter; after, 53.5.

	Before.	After.
Organic Carbon	2.289	2.203
Nitrogenous matter	2.859	1.779
Ammonia	6.000	5.000
Nitrogenous matter in combination	7.800	5.887
Matter in suspension, mineral and organic	43.000	4.008

This result, though obviously good, cannot be considered satisfactory epuration for domestic purposes.

Clay will promote decomposition of nitrogenous matter when brought in contact with the lime it contains, and the alum will cause a precipitation. But this has proved an unsatisfactory method in the treatment of sewage at Tottenham, although complete clarification was secured before discharging in the river Lea. A flocculent deposit collected on the bed of the river of highly putrescible character.

It is obviously impossible to treat potable water with clay, even if a more satisfactory result could be attained.

The more complicated methods of chemical treatment, such as Hille's, Goodall's, Holden's, Campbell's, and Scott's processes; the A. B. C. process of Sillar; the lime and chloride of iron treatment afford little assurance of successful epuration, and many of the agents employed would be objectionable in a water-supply.

Dr. Frankland wrote a few years ago, "The actual resources of chemistry do not permit the hope that the dissolved impurities in sewage can be precipitated by any appliance of chemical reaction, and unless new chemical laws are discovered, it is useless to attempt the employment of this agency.

Soil purification, though capable of transforming sewage into potable water, opens up a subject beyond the limits set for consideration this evening, and it is not applicable to the purification of water in open sewage basins, except so far as filter galleries will eliminate a certain amount of material in suspension.

"It is difficult to reconcile the apparent difference of opinion between scientists of America and Europe. In the latter country filtration is almost universally practiced. The British army in Africa was supplied with portable filters presumably by the advice of the medical department. Such men as Lister, Frankland, Alfred Clarke and many others certify to the usefulness of a good filter. I have used one in my family since 1882, and there has never been a time even when water from the unexcavated basins on the Sudbury river was supplied that all the apparent organic matter in suspension was not removed, besides decolorizing the water by the ordinary tests."

Dr. H. C. Ernst said that he desired to protest against the view apparently advanced by Professor Sedgwick, that the indiscriminate and unhindered swallowing of bacteria in any and all forms is harmless, not to say wholesome. No person who has ever witnessed the results of the ingestion of the germs of cholera, either in the way of an epidemical outbreak of that disease, or as a means of research in experimental pathology, could entertain such an idea for a moment. The sterilization of water by filtration has been tried in a very thorough manner in the laboratory of Professor Koch in Berlin. Many different kinds of filters were employed, and the resulting filtrate was tested as to its freedom from germs by means of culture-plates. None of the common forms of filter were found to be bacteria proof. Only one was found which was capable of arresting the germ contents of water. This was the filter devised by Chamberland in Professor Pasteur's laboratory. In most of the filters it was observed that the germs grew rapidly in the filter, and soon penetrated the wall of the filter by direct growth from the other side, and thus appeared in the filtrate in large numbers.

Professor Sedgwick stated that he by no means wished to be understood as believing that it was safe or prudent to employ polluted water for domestic purposes. He said that there was no doubt on the other hand that a vast number of germs were undoubtedly taken into the human organism every day, and there is usually no serious result from their ingestion. Of course there are microscopic germs, which are harmful or even destructive to the animal body, and these can never be taken except on peril of great disturbance to the functions of the body, but there are also a vast number of germs which may be, and are taken into the body without perceptible detriment.

The Chairman announced that he had received a communication from a delegation of the Society upon the subject of Physical Culture, and desired to refer the matter to the Section for their action. On motion of Dr. Bradford the subject was referred to a committee of three to be appointed by the chair, to report on the same at the next meeting. The chair appointed as that committee, the following: Dr. E. H. Bradford, Chairman, Dr. C. P. Putnam and Dr. J. P. Reynolds.

The Secretary announced that he had just received a letter from the Secretary of the Middlesex South District Medical Society, stating that a committee had been appointed from that Society to co-operate with the committee from this Section in the matter of urging the adoption of some plan for the physical training of school-children. The committee so appointed consisted of Drs. E. Farnham, C. H. Cook, and H. P. Walcott.

A variety of filters of various forms and structure was arranged upon the table, some of which were portable, and some of which were attached to the service-pipes of the building. The following filters were explained by representatives of the manufacturers or owners. Micro-membrane Filter, by Professor Sedgwick; Sanitary Improvement Co.'s, by A. P. Howe, Esq.; "Filtre Rapide" (Maignen's), Blanchard, Farrar & Co., by Mr. Blanchard; Cheevans, Jones, McDuffee & Stratton, by Mr. Jones; Diamond Filter, by Professor Swain; American Filter.

Adjourned at 10.30 o'clock.

PROCEEDINGS OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

HERBERT L. BURRELL, M.D., SECRETARY.

October 30, 1886, the President, Dr. G. B. Shattuck, in the chair.

Dr. G. H. Monks reported

A CASE OF UNUSUAL DEFORMITY OF BOTH HIP-JOINTS, AND EXHIBITED THE PATIENT.[1]

Dr. A. N. Blodgett asked if there were any nervous lesion present in the case that might account for the remarkable difference in development of the upper and lower extremities of the patient. He further called attention to a peculiar, claw-like action of the feet when the patient was walking.

Dr. Monks said that he knew of no nervous lesion.

Dr. R. M. Hodges inquired what evidence there was that the deformity had only existed two years.

Dr. Monks said that careful questioning of the patient and his parents were the basis for the statement.

Dr. E. W. Cushing inquired if the patient had ever

[1] See page 468.

had any acute infectious disease; if he had ever had acute rheumatism or gonorrhœa.

DR. MONKS replied that he had not.

DR. PRINCE inquired about the reflexes.

DR. GREENOUGH asked if the pelvis moved with the femora; if there were complete ankylosis.

DR. MONKS said that the pelvis practically did move with the femora, as there was only a very limited degree of motion.

DR. BARNES inquired if the flat-foot were acquired.

DR. MONKS said that he could not say how that was.

DR. OTIS K. NEWELL then read a paper on

THE MALE URETHRA: SOME OBSERVATIONS ON THE ANATOMY OF, IN RELATION TO ENDOSCOPY, LITHOLOPAXY, AND CATHETERIZATION.[2]

DR. CABOT inquired if the short tube could be introduced without bringing it down to the axis of the body.

DR. NEWELL replied that it could.

DR. CABOT asked if the tube would stay in position after the tube is brought to angle of 45°.

DR. NEWELL said that it would, owing to the large size of the tube engaging the circumference of the prostatic urethra.

DR. CABOT said that in certain cases where there were deep, long prostates, he had encountered some difficulty in making an evacuating tube retain its position.

DR. NEWELL said that in ten subjects he had been able to introduce his tube so that from one and a half to two inches of tube protruded from the vesical orifice into the cavity.

DR. M. H. RICHARDSON said that he had used Dr. Newell's endoscope with success, and felt that with more experience in its use, that he should be able to obtain valuable information. In one case, he said that he had been enabled to settle a question regarding the presence of a tumor in the bladder.

Recent Literature.

Elements of the Comparative Anatomy of Vertebrates: Adapted from the German of Wiedersheim, Professor of Anatomy, etc., at Freiburg in Baden. By W. NEWTON PARKER, Professor of Biology in the University College of South Wales and Monmouthshire. With additions by the author and translator. London: Macmillan & Co. 1886.

This book will be useful to those who desire to find in a convenient form the main facts of vertebrate anatomy. It will also be very valuable as a text-book in a course considerably amplified by the teacher. The defect of overcompression is almost unavoidable in a work of this nature. It is most difficult to know where to draw the line, and we think that the author has shown wisdom in the limits he has imposed. Once in a while a very few additional words would be of great advantage. Thus on page 287, there are figures of five different arrangements of the great vessels from the aortic arch in mammals, but the student is not told in which animals they occur. The plan adopted is the very practical one of following the same organ or system throughout the vertebrate classes. This makes it much easier for the student who wishes to look up some particular point. The book is very thoroughly illustrated, and many of the diagrams are admirable for their clearness and simplicity. We notice a gross error in the figure of the human sternum, which we suspect must have been added by the translator, as it could hardly have escaped the notice of a professor of human anatomy. Many of the illustrations are old friends, but of the kind that we can hardly meet too often. To our mind, a defect in the book is the admission of theories here and there into a work which should be only the record of facts; but this fault is nowadays almost a matter of course. The book is written for students of medicine, as well as for those of comparative anatomy, and we think it will be welcome to both. T. D.

Spasm in Chronic Nerve Disease. By SEYMOUR J. SHARKEY, M.A., M.B., etc., of London. 8vo. 99 pp. London: J. & A. Churchill. 1886.

This volume consists of the Gulstonian Lectures for the present year. The subject is treated under three heads: spasm in connection with cerebral motor mechanisms, spasm in connection with spinal mechanisms, and functional spasm. The consideration of the forms of spasm seen in convulsive diseases, like epilepsy is not dwelt upon. Under the first head he considers especially those conditions of muscular rigidity and contracture seen after cerebral disease, such as hæmorrhage, softening, tumors, porencephalia, etc.; and also certain conditions of mobile spasm, like athetosis and post-hemiplegic chorea. "The pyramidal tract stands prominently forth as the great offender in the production of muscular spasm. . . . It only looses the reins of the spinal centres, which it should keep well in hand. Still, it rules the situation. . . . The symptoms of disease of the lateral columns of the cord are the same, whether it follows cerebral or spinal lesions." He also quotes cases of hemiplegia, where there was no direct lesion of the pyramidal tract, and consequently, as he thinks, no signs of rigidity ever appeared. This theory, although very probable, is not, however, universally admitted, and it would seem strange, were it not for the too common ignorance of German work which English writers seem to show, that, in such a treatise no mention is made of the views of those who hold that contracture and late rigidity in hemiplegia have nothing to do with secondary degeneration of the pyramidal tract. Contracture, he says, is seen in peripheral diseases, but many of the cases may be explained by a contraction of antagonistic muscles, as in *main en griffe*, or by contractile processes due to disease of the muscles themselves. Pain, trauma, or joint-disease might not produce contraction if the centres were normal. An involuntary neuro-muscular habit may explain such cases. Functional spasm resembles spasm from gross lesions, and is thought to be due to molecular changes analogous to the gross changes. In some of these cases, as in writers' cramp, the part of the pyramidal tract involved is fatigued, the lower centres are "let go," and spasm results. In gross lesions when the morbid process attacks the motor cells the spasm ceases and paralysis ensues. An analogous molecular change may account for the "paralytic" forms of writers' cramp. Molecular changes in the peripheral nerves, rarely if ever, cause spasm. The book is clearly written, and well printed, but unfortunately it lacks an index. P. C. K.

[2] Published in No. 19 of the Journal, page 443.

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MEDICAL EDUCATION IN THE UNITED STATES.

THE excellent work undertaken half a dozen years ago by the Illinois State Board of Health in the investigation into the requirements for entrance and graduation by the various medical schools of this country has had a fruition beyond the original aim of those who undertook it. The data, originally collected to serve as a basis for deciding what were colleges in "good standing" for the purpose of enrollment, according to the medical-practice requirements for the State of Illinois, have proved of value as standard statistics of the subject of medical education, and the publicity given to the reports has doubtless conduced toward a raising of the standards of institutions, which, but for this turning on of the light, would have been content with their former low grade of requirements. Primarily a police measure, the work has become an educational agency.

The latest report on this topic[1] brings the list of medical schools up to 252, from the 59 schools recorded in the first report. One hundred and twenty-three of these schools have succumbed to *tempus edax rerum*. But time itself has not so sharp a tooth against weak and incompetent medical schools as has the Illinois State Board, which is now supported by those of several other States — among them Minnesota, Missouri, and Iowa — and as a third of the new medical graduates yearly settle in the Western States, the sentry-work done by these organizations is especially useful.

The schedule of Minimum Requirements now in force for admission to all schools which are held "in good standing" includes a thorough examination in English branches, including mathematics, English composition and elementary physics, and natural philosophy. A minimum length of curriculum is two terms, of twenty weeks each. Quizzes or examinations, at least twice weekly, are required, with final tests in ten recognized departments of medicine, among them hygiene and State Medicine. Dissection is obligatory during two courses, and the entire period of study, prior to receiving a degree, must be not less than three years. While these provisions are somewhat less stringent than those of the American Medical College Association, they have the advantage of applying to all schools of medicine, and have been successfully enforced for three years.

As showing the increasing extent to which the Schedule is complied with, the following comparisons are of interest: Of the 129 colleges now in existence, there are 114 which exact an educational requirement as a condition of matriculation; in 1880 there were only 45. Attendance on three or more lecture-courses before graduation is now required by 41 colleges, as against 22 heretofore; and provision is made for a three or four years' graded course by 48 others. Hygiene is now taught in 110 colleges, and medical jurisprudence in the same number, as against 42 and 61, respectively, heretofore. The average duration of lecture terms has increased from 23.5 weeks to 24.8; 9 more colleges have lecture terms of five months or over, and 13 more have terms of six months or over, as compared with the sessions of 1882–83. These changes have all been made in the medical colleges of the United States, no material alteration in the Canadian schools having taken place in these respects.

A part of the report of considerable interest is that which covers the ratio of increase numerically and proportionally in the profession. In 1880, there were, according to the National census, 83,436 physicians in the United States. Since that date there have been added — exclusive of the foreign increment — 23,531 new graduates, not including those of the last session, 1885–1886. This makes a total of 106,947, and is an annual increase of over five and one-half per cent., while the annual increase of population is less than two per cent.

As might be expected, this proportional increase in the numbers entering the ranks of the profession is attended not only by close competition, but by a certain amount of downright failure. As shown by the figures for the State of Illinois, over seven per cent. of the entire number failed as physicians, and sought other modes of obtaining a livelihood. It is noteworthy, by the way, that non-graduates fall out in much larger proportion than the graduates, and that the graduates of three-course schools show the smallest percentage of loss, either by removal from the State, or by abandonment of practice.

The rate at which some of these superfluous men fall out of the ranks is shown for Chicago, thus: In 1880, there were certificates issued to 172 new-comers; five years later, only 84 of these remained — a loss of over one-half. In 1881 there were 183, in 1882, 171; in 1883, 200, and in 1884, 198 new-comers; and in 1885, there remained of each year's group, 97, 116, 145, and 168, respectively. In one year the loss was 15 per cent.; in two years, 30 per cent.; in three years, 32 per cent.; in four years, 47 per cent.; and in five years, over 51 per cent.

[1] "Medical Education and Medical Colleges in the United States and Canada," 1765-1886. Illinois State Board of Health, Springfield, Ill., 1886.

While there are estimated to be in the State of Illinois from 1,500 to 2,000 physicians more than are necessary to supply the legitimate demand for professional services, and probably an equal proportion in other States, it is gratifying to learn the conclusion drawn from the wide personal experience of the author of this report, whose official position has, during the past nine years, made him familiar with the professional history and status of over 13,000 men, more or less directly connected with the practice of medicine in Illinois. He has followed up, with especial interest and care, the careers of 789 out of 1,000 physicians who studied four years, and attended three terms before graduating. "These are," he says, "with a few exceptions, the successful and prominent members of the profession in the different communities in which they reside. They are well equipped by general education, by an ample period of professional study, by didatic and clinical instruction, and by hospital practice. They are successful, as a rule, because they have fitted themselves to command success."

SANDALWOOD OIL AS AN ANTI-BLENNORRHAGIC.

ACCORDING to Jaccoud's *Dictionaire Pratique*, that which renders the sandalwood oil valuable, outside of the rapidity and efficacy of its action as a blennorrhagic is that the drug, far from producing upon the stomach and upon the urinary passages the unpleasant effects of copaiba, is perfectly inoffensive and even agreeable, . . . in place of fatiguing the stomach and occasioning regurgitation . . . it stimulates the digestion and possesses a stomachic action without provoking any trouble of the digestive functions. Elimination by the skin never causes an exanthem, and the author of the article adds to these negative virtues very positive attributes in most diseases of the urethra and bladder, so that one is reminded of the historical writers of his boyhood in which the hero of the story is possessed of an unfailing perfection and his enemies of equally great failings.

In the *Annals of Surgery* of a year ago, was an article which extolled the drug in epididymitis, and mentions its value in gonorrhœal rheumatism. At the recent meeting of the Society for Internal Medicine in Berlin, a paper on the drug was read by Dr. Posner, and debated by several gentlemen, in which valuable properties were ascribed to the drug in cases in which injections were improper, namely, those in which the disease manifested its passage beyond the compressor urethræ muscle by inflammation of some of the adjacent organs, as the prostate, bladder, or testicle. It seemed to be the opinion that under all circumstances sandal oil was better borne than the other balsamics.

The report of Posner and the discussion, calls out a broadside from Dr. Letzel, of Munich, who makes a very genuine addition to our knowledge of the drug.

Dr. Letzel reports, from his clinic for skin diseases and syphilis, an abundant and carefully observed series of cases in which sandal oil has been administered for gonorrhœa or some of its complications.

During less than a year past Letzel has used sandalwood oil on gonorrhœal patients ninety-seven times. The drug was given at first in an emulsion with burnt coffee and cinnamon water, but patients had such an aversion to the mixture that capsules were substituted. Decided disturbances in the digestive tract occurred in four out of the ninety-seven patients, twice decided diarrhœa, and twice severe dyspepsia which lasted many days. Burdensome eructations, oppression and burning in the stomach, and a marked feeling of thirst were often noticed, but of transient nature which did not necessitate the abandonment of the drug. Five times occurred congestive pain in the region of the kidney, which reached such intensity in two cases that the subcutaneous use of morphine was necessary. Letzel then quotes from the second edition of Jullien to the effect that many patients complain of a painful sensation which occurs thirty to forty-five minutes after the injection of the remedy and radiates through the loins and even to the testicles, and that there is no trouble to which sandal oil gives rise more frequently than this congestive pains in the lumbar region. Jullien describes also an erythema from the drug, probably the only reported eruption from sandal oil.

Letzel sums up his experience in the following conclusions:

In the beginning of a gonorrhœa sandalwood oil influences the secretion in such a manner that after a few days the discharge becomes decidedly less, and instead of a greenish-yellow color appears only somewhat milky. The pain in urination and erection decrease faster than by indifferent treatment, and disappear freely in a few days. Of forty-two cases so treated, thirty-seven were influenced in the manner noted. In the seven remaining cases the influence of the sandal oil on the gonorrhœa was not noticeable.

If after ten to twelve days the use of the oil is abandoned the disease grows worse in most cases. The use of sandalwood oil gave the best results when it was begun in the third or fourth week of the disease, and when accompanied by a slightly astringent injection. Three out of twenty cases of this class healed without any injection in two to three weeks. In twenty-one cases out of twenty-nine, the excretion disappeared within eight to twelve days and were ended with an injection. Eight patients in whom a favorable result was not reached were indolent careless tramps.

In gonorrhœal cystitis and prostatitis the exhibition of sandal oil was of great use in all cases. The length of the affection was decidedly shortened and the suffering greatly diminished.

Chronic gonorrhœa was not noticeably influenced by the drug alone though local medication seemed to act more favorably with simultaneous internal administration of the oil.

"All in all, sandalwood oil modifies the secretion with decidedly greater promptness and surety than the other balsams, but the stomach does not endure the drug so lightly as most authors are inclined to believe, and further, the eventually occurring congestive condition of the kidneys warns us to greater care, and the last greatest defect in the drug is its too great expense."

MEDICAL NOTES.

— An order has been issued in Lower Austria forbidding manufacturers and tradesmen to sell nickel-plated vessels for cooking. It is stated that vinegar and other substances dissolve nickel; and that this, in doses of the seventh of a grain, produces vomiting, and is generally more poisonous than copper.

— Professor Ludwig Bandl, of Vienna, has been appointed Professor of Obstetries and Gynæcology at the University of Prague, to succeed Professor A. Breisky, who has been called to Vienna, to occupy the chair vacated by the retirement, through ill health, of Professor Spaeth.

— In view of the prevalence of cholera at Pesth, Trieste, and other places, the Local Government Board of England, have issued an order prohibiting, until April 1st, 1887, the importation into this country of rags from Austria-Hungary. The Board have also extended until April 1st, 1887, the prohibition of the importation of rags from Italy.

— A German, according to an exchange, had run up a large doctor's bill and called to see the physician concerning it, whereupon the following conversation ensued: "Goot-mornin', dogtor.', "Good-morning, Mr. Mozenthal. How is your family?" "Pretty vell; I gome to ask you sometings aboudt mein bill." "Yes?" with animation. "I don'd haf got mooch money, I vants to know vill you tage id oudt in der trade?" "I guess we can arrange that" (cheerfully). "What's your business?" "Vell — I blay me a leedle on dot trambone; undt I seranadt you more as twendy times!"

— Having found that the compound licorice powder produced very severe griping in many instances where he had ordered it, the griping being particularly severe in some of his younger patients, Dr. Martin Oxley (*Lancet*), has ordered the following formula for some time past, in which anise fruit is substituted instead of the fennel, and one-fourth part of ginger is added. The altered formula runs thus — senna and licorice-root, of each two parts; anise fruit and sulphur, of each 1 part; sugar, 5¾ parts; ginger, ¼ part. This altered preparation is quite as satisfactory in its laxative properties, is less liable to gripe, and is as pleasant to take as the officinal powder, and he would suggest its trial in cases where the powder as now prepared produces the disagreeable effects to which he has referred.

— A curious experience is related in the *Medical and Surgical Reporter*, of Dr. Robert St. George Dryanforth, of Washington. While serving in the War of the Rebellion, the doctor was shot through the lungs and invalided. He subsequently went to Europe for his health, and remained there for some years. When the German war broke out, he became correspondent for the *New York Tribune*, and in one of the battles he was shot through the base of the skull. He caught a heavy cold while lying wounded on the battle-field, and his wound in the lungs troubled him so much that his life was despaired of, and he was considered a victim of rapid consumption. One day during a violent fit of coughing the doctor brought up a piece of his overcoat, which had been shot into his lungs ten years before. The ejection of this cause of irritation so relieved him that he at once became better, and finally completely recovered. He returned to Washington, and has since held the office of Judge of the Court of Appeals. He was also a member of the Board of Examiners, and Assistant Commissioner of Patents.

— *The Medical Press and Circular*, Sept. 8, 1886, vouches for the truthfulness of the following: "A certain operator proposed to remove 'the uterine appendages' from a patient under his care, and he asked a gentleman present if he would like to examine the patient, saying she had been suffering for years with an acute pain, that life was a burden, etc. The gentleman, struck by the full, round, rosy cheeks and red lips of the woman, first asked her how she slept at night. 'Oh, very well, thank you,' was the reply. 'You have no pain at night, then?' was the next question. 'Oh, no,' she answered. 'Have you pain all day long?' continued the questioner. 'Not all the day through,' she replied. 'Have you pain every day?' he went on. 'No, not every day,' was the answer. 'How often does the pain come on, then?' the gentleman continued. 'Oh, three or four days a month,' was the innocent reply, much to the amazement of the questioner. The would-be operator was heard to mutter something about 'getting any answer you like,' but it will be satisfactory to learn that the patient saved her ovaries on that occasion, at least."

— The eminent surgeon, Professor Billroth, of Vienna, has joined the number of German professors who have lately spoken of the necessity of stricter supervision of the university students. He writes, with particular reference to students of medicine: "Sad experiences and observations naturally suggest the thought that our young men are not ripe for the degree of freedom prevailing in our universities. It is to be hoped that by tightening the pedagogic reins some improvement may be effected; the protest of the apostles of freedom surely ought not to be heeded. I would not favor a daily roll-call, but if, for instance, every clinical student had to appear four times instead of once at the practical demonstrations, and should mercilessly lose a semester by his absence when called out of turn, perhaps the students would attend the clinical lectures more frequently." He urges, before all, stricter pedagogic measures on the part of the

parents, saying: "We have overrated the average capacity of our students, their ethical force, and strength of character. A continuance of the present state of affairs would be perfectly unjustifiable."

— The propriety of adding salicylic acid to beer as a preservative is, we learn from the *British Medical Journal*, much discussed in Paris at the present time. The beers incriminated are principally of Bavarian origin; and the outcry, whatever may be the justice of the allegations, looks suspiciously like a determined attempt on the part of the influential wine-interest to hamper the import and sale of these foreign drinks, the annually increasing consumption of which has long been a thorn in its side. The addition of salicylic acid to milk is considered an adulteration, less, possibly, on account of its physiological effect than because it enables the dairyman and milk-factor to relax to some extent the extreme precautions of cleanliness otherwise necessary to keep the milk fresh and sweet. The injurious effects alleged to result from the ingestion of salicylic acid in beer have not been demonstrated with legal exactness, but it may, nevertheless, be condemned as an unnecessary and possibly hurtful ingredient. The subject has also been under discussion in Germany, with the curious and instructive result that the addition to beers for exportation has been authorized, but forbidden in beers destined for home use. This is a striking departure from the very excellent maxim about doing unto others as we would have others do unto us, and justifies to some extent the rigorous measures which it is proposed to take in regard to such beers in France.

NEW YORK.

— Dr. Samuel M. Fisk, a prominent physician of Brooklyn, Eastern District, and an inspector for the Brooklyn Health Department, died suddenly of apoplexy at his residence, on November 10th.

— The increase of measles has become more noticeable during the last two weeks. In the last week of October there were reported 162 cases, with 17 deaths, and in the week ending November 13, 288 cases and 43 deaths. Diphtheria is also prevailing to some extent in the tenement-house districts, and out of 79 cases reported in the last week of October, there were 48 deaths. During the week ending November 6, there were reported 83 cases and 32 deaths; during that ending November 13, 117 cases and 47 deaths.

— Dr. Cyrus Edson, of the Health Department, has seized and condemned 5,280 gallons of wine at a factory in the lower part of the city, and asked the authority of the Board for its destruction. He reports that the wine is made by macerating low grades of dried fruits in water, fermenting the product, and then adding four or five grains of salicylic acid to the pint as a preservative. Dr. Edson believes the wine to be deleterious to health, in which opinion he is supported by other officials of the Board; and the matter has been referred to the Counsel for the Department and the Sanitary Superintendent.

Miscellany.

SOME VITAL STATISTICS OF GRADUATES OF HARVARD.

AT the recent Harvard Festival, a small pamphlet was distributed, prepared by W. H. Tillinghast, editor of the Quinquennial Catalogue, and revised to the present date, which presents some facts of interest to the student of vital statistics.

The oldest surviving graduates are William Perry, M.D., of Exeter, N. H., born December 20, 1788; William R. Sever, of Plymouth, Mass., born May 30, 1791,— both of the Class of 1811, graduated seventy-five years ago.

The Classes of 1812, 1814, 1816, have no living members; those of 1813, 1815, have each one; that of 1817 has five. The first class in which the number of survivors is in excess of the deceased is that of 1841, the figures being respectively 25 and 21.

The percentage of deaths in the Classes from 1811 to 1880, arranged in ten year groups, is as follows:

Classes.	Per Cent.	Classes.	Per Cent.
1811-1820	97	1851-1860	28
1821-1830	87	1861-1870	16
1831-1840	59	1871-1880	6
1841-1850	41		

The percentage of deaths in the total number of graduates having been calculated for several of the schools, is thus compared with the same ratio for the College for the same length of time:—

Of the graduates of the Medical School, 30.7 per cent. are deceased; of the College, for 1791–1886, 38.9 per cent. Of the graduates of the Divinity School, 43.5 per cent. are deceased; of the College, 1820–1886, 25.7 per cent. Of the graduates of the Law School, 17.05 per cent. are deceased; of the College, for 1823–1886, 23 per cent. Of all who have received honorary degrees, 83.79 per cent. are deceased. Of all graduates of the College since 1642, 51.78 per cent. are deceased.

The average age of deceased graduates, from 1883–86, is as follows: the College, 58.4; Law School, 50.9; Medical School, 57.3; Divinity School, 64.9.

CHOREA CURED BY GYMNASTIC EXERCISES DURING HYPNOTISM.

THE *Practitioner*, October, 1886, gives a very careful and detailed account of a case of chorea in an Italian girl aged twelve, published by Dr. Riccardo Pari in *Lo Sperimentale*, July, 1886, lviii. 77–83. When it came under his notice it was not otherwise remarkable except that it had lasted for four years. It came on after a sharp attack of scarlet fever, and there was no accompanying rheumatism or hysteria of any sort. Careful hygiene had been kept up, and the treatment of electricity, tonics, and arsenic fully tried. When examined in October, 1885, there was no anæmia, no cardiac abnormality nor other morbid physical signs beyond moderately severe bilateral chorea. In recent medicine there are some cases of chorea cured by suggestion in hypnotism, and this was first tried by Dr. Pari. The girl was hypnotised by making her gaze fixedly at something in her hand, and it was strongly urged upon her when she was in the hypnotic condition that she should have no more chorea. Two such attempts

had no success, which was ascribed partly to her distrust in all methods of cure after her long experience. Then it was remembered how useful gymnastics had been in the cases of Hasse, and at the third hypnotic sitting this idea was taken up, and she was ordered to hold her arm out and keep it still. There was slight tremor after six or seven minutes (when the muscles in a normal state generally begin to grow exhausted), but she was ordered to keep it still, and succeeded in doing so for much longer. In subsequent sittings she obeyed orders to keep both arms outstretched for a quarter of an hour without tremor, to walk quietly, to stand still in all varieties of position, first on one leg, then on the other, etc. Between the sittings there was gradual improvement, and after twenty of them she was quite well.

PERITYPHLITIC ABSCESS DISCHARGING SPONTANEOUSLY AT THE UMBILICUS.

In the *Practitioner* (October, 1886), is recorded the following interesting case by Mr. William Pugin Thornton, M.R.C.S.:

"Early on the morning of August 1st, 1884, I was called to see a youth. He was slightly made, but very tall for his age. Lying on a bed, his face covered with perspiration, his body and limbs were cold, and his knees drawn up, and evidently he was in great pain. He was constantly sick, vomiting an almost stercoraceous fluid. The abdomen was tense and tender to the touch, especially in the right hypogastrium. His temperature was not very high, but having lost the record of the temperature I am unable to give any in connection with this case.

"The account given me was that for a week he had been over-worked, being at his office from 9 A.M., to 9.30 P.M. He then took a day's holiday, walking about twenty miles, and eating very little during the day except some hard apples. On reaching home late in the evening he had a substantial dinner, and went to bed shortly after. He slept through the night, but felt tired the next morning, and had little appetite throughout the day. He went to bed at 10, P.M., and slept till midnight, when he woke up with pain in the abdomen round about the navel; being sick and the pain increasing he called the servant up, who put hot flannels on him, and obtaining relief he fell asleep till 7, A.M. He then woke with intense pain, and was sick about every half hour. I saw him at 8, A.M., and again at 11, A.M., with my partner, Mr. T. Whitehead Reid. We could come to no accurate conclusions. Later on some of the symptoms pointed to typhoid, but taken altogether they did not satisfy us it was that disease. We treated the acute symptoms, sickness and pain, and on hearing the account of apples eaten on an empty stomach we gave castor oil with tincture of opium.

Nine days after it was evident that there was a collection of pus in the right hypogastric region. My partner and I considered the advisability of opening the abdomen. In the middle of the night (the 10th), the patient was alarmed by a gush of fluid through the navel. This proved to be pus, and the discharge continued through the night. In the morning I pressed out from a pint and a half to two pints. After a time he learnt to pass a catheter through the umbilical wound, and to syringe out the abscess cavity with Condy's fluid. The catheter disappeared a distance of nine inches."

On September 18th, the visits to the patient were given up and shortly after he went away. On November 6th an umbilical fistula, three inches deep, was all that remained. At Christmas time the wound was healed.

It would seem that in this case there was ulceration through the appendix vermiformis, followed by a deep abdominal abscess, and that it belonged to one of the interesting class which Dr. Fenwick mentioned in his Clinical Lectures at the London Hospital, published in the *Lancet* in December, 1884.

OBITUARY. — PAUL BERT.

M. Paul Bert, the statesman and scientist, died in Paris, November 11. Born at Auxerre, October 17, 1833, he lost his mother when a child and was brought up by his father, who was the son of a serf on the church lands of Auxerre, whom the revolutionists emancipated. He received a collegiate education and early developed an inclination toward the sciences. He entered Sainte-Barbe with the intention of preparing himself for admission to the Polytechnic at Paris, but owing to a change in circumstances, altered his plans, applied himself to the study of law, and received a license to practice. He then relinquished the law for the study of medicine. Licensed in 1863 as doctor of medicine and as doctor of sciences in 1866, he was made instructor in zoology to the faculty of sciences at Bordeaux in place of M. Flourens, and in 1868 he succeeded the celebrated M. Claude Bernard at the Sorbonne.

Among the earlier scientific works of Paul Bert were experiments with the physiology of breathing at high altitudes, and discoveries then new, now commonly known, as to the nature of asphyxia and the rôle of oxygen were made by him. The first thesis of M. Bert on animal grafting, won for him in 1865 the prize of experimental physiology. The result of his researches on the atmosphere was published under the title of "La Pression Barométrique." For this he was awarded the grand biennial prize of the French Institute. Like some other men distinguished in science, M. Bert developed a taste for political life. After the downfall of Napoleon III, in 1870, M. Bert was at first secretary of the prefecture, and then perfect of Yvonne, his native department. He was elected to the National Assembly in 1872, continuing its member for ten years or more. Politically he was an ultra radical, and evinced hostility to monarchs, monarchists and Catholics. Gambetta made him minister of instruction in the cabinet of 1881–82. In April, 1878, he was elected a member of the Academy of Sciences, and in January of the present year he was appointed to the post of minister resident of France at Hué, the capital of Annam. Among his scientific works are "De la Greffe Animale," published in 1863; "Revue de Travaux d'Anatomie et de Physiologie," published in 1864-66; "Notes d'Anatomie et de Physiologie Comparé," 1867-70; "Recherches sur la Mouvement de la Sensitif," 1867-70; "Leçon sur la Physiologie Comparée de la Respiration," 1869; "La Pression Barométrique"; "Recherches de Physiologie Expérimentale," 1879. Beside this, for many years he furnished the "Feuilleton Scientifique" for M. Gambetta's journal, the République Française. M. Bert's embassy to Tonquin which he undertook in the hope of adjusting the somewhat complicated diplomatic relations of the Republic with China, is understood to have been in its results somewhat of a disappointment to him.

Correspondence.

ABORTION OF FELONS. WRINKLES, NEW AND OLD.

NEW YORK, November 13, 1886.
18 West 30th St.

MR. EDITOR, — My father was a medical man, who graduated from the University of Pennsylvania in 1816 or 1817. In 1839, I learned from him that a felon could, if seen early enough, be made to abort by wrapping the finger-end with narrow strips of adhesive plaster.

When pus has been formed, I learned twenty years ago,

from a country doctor, that immediate relief and speedy cure would follow the gentle, slow separation of the nail from its envelope by means of a pen-knife blade, not too sharp, at the point nearest the seat of greatest pain. Very soon a drop of pus shows itself, and relief comes.

I am aware that the plan described is known to many medical men. It was not known to me at the time referred to, when the country doctor showed me how to treat a paronychious patient, whose finger I was about to lay open by the "free incision down to the bone," taught in the lessons of my great masters.

What a lot of valuable information a man decently furnished with humility can learn from our "one-horse-shay" brethren, who practice and *do their own thinking*, far removed from Poly- or Molly-clinics, and proximity to big batteries of consultation celebrities! And what a pity that so much of the knowledge they have slowly and painfully acquired should die with them!

In such intercourse as consultation practice brings me, I have been much impressed by the small number of medical men who know or practise Fuller's system of prescribing, enabling us to do away with the "uncertain, coy, and hard-to-please" vials, from which medicines are directed in *drop* doses. Have you not in your mind's eye, a blear-eyed Sairey or Betsey, of the Gamp or Prig family, as she endeavors to give three drops of tincture of aconite root, by the light of a poor tallow candle, or poorer oil-lamp, "every three hours?" It is needless to insist upon the difference between a drop and a minim; nor is it less so to say what different potency the same tincture (by name) has, according to its age, evaporation, or primary value.

Not long ago, in writing to an old pupil, now a prominent physician of the Pacific slope, I recommended Fuller's tablet triturates. In reply, he said, "What are they? none of our apothecaries know about them."

Just here, in my note to you, my mail-box gives me a letter from an old graduate of the University of Pennsylvania, to whom I had sent a small pocket-case of tablets, containing the medicines most often needed in general practice. The letter was one of thanks for the "new wrinkle," and gave me the following piece of personal history: "Some years ago, I went into a drug store, and told the man to give me a dose of salts, with twenty drops of laudanum in it. I was suffering from dysentery. So far as the epsom salt went, the prescription was all right, but he dropped the opiate tincture from *a gallon bottle*. I swallowed the dose, went home, and went to sleep, and *it took twelve hours to wake me up*. The family thought I was poisoned, and if I had died, the boys would have killed that druggist, *sure*."

I am well aware how many of our brethren confine their medical reading to the text-book published when they were students — in one case, in the year 1835 — and to what they can gleam from periodicals of the day. In that loyal legion there may be one or two, who, turning over the leaves of your excellent weekly, can find something new or useful in what I have written you. The abolition of tinctures and fluid extracts, when possible, would be a great emancipation for us doctors, who live and work without a trade-mark. Very truly yours, J. T. M.

DISLOCATION OF THE RIBS.

BOSTON, 138 Boylston St., Nov. 12th, 1886.

MR. EDITOR,—In the JOURNAL for Nov. 11th, 1886, is a very interesting account of the traumatic dislocation of the ribs, by Dr. W. C. B. Fifield. After referring to the rarity of this injury, Dr. Fifield says: "I could find no allusion to this accident except in one of the volumes of external pathology, by Barnes, and some person associated with him. . . . I certainly have not ever seen it in the best works of English surgery. I find not the slightest allusion to any such accident."

At a meeting of the Boston Society for Medical Observation I had the honor to report one case of similar character to that here mentioned by Dr. Fifield. The patient was a man who was injured by the effect of a sudden and unexpected great strain upon the extended arms, from weight, one end of which he was carrying. The sternal ends of the two upper ribs were dislocated forward upon the sternum, and the sternal end of the clavicle was also dislocated forwards into the interclavicular notch. I at that time collected all the well-authenticated cases of which I could learn, some five in number, and tabulated the character of the injuries with their causes.

This particular class of dislocations, as Dr. Fifield truly says is very rare, but the case he reports in the JOURNAL is not entirely unique, as the reading of his description would seem to indicate, for besides my own case above spoken of, there are no less than four other recorded instances of this injury, affecting a variable number of ribs, all of which are undoubtedly authentic. I am led to call attention to the facts in the case from the lack of mention in many standard works of surgery, of the cases now known, and the apparent need of again alluding to the really undoubted instances of this very rare lesion. The case reported from my own practice, together with those collected from other sources is published in the *New York Medical Journal* in the issue for July 14th, and July 21st, 1883.

Yours respectfully,
ALBERT N. BLODGETT, M.D.

A CURE FOR NEURALGIA.

EVERETT, Mass., November, 1886.

MR. EDITOR, — The experience of over fifty years in the practice of medicine ought to enable a person to give some facts or opinions that might be of service to the younger members of the profession. Judging from the various remedies and their combinations, prescribed for pure neuralgia, it must be a difficult as well as a perplexing disease to treat.

As the medication that I have used has been efficacious in my hands, it seems worthy of publicity.

R	Tinct. Cinchona Comp.	ʒ ij.
	Tinct. Nuces Vom.	ʒ ss.
	Morphiæ Sulph.	grs. ij
M.	Dose, one teaspoonful every three hours.	

This may be varied according to the susceptibility of the patient. It may be thought incredible, yet nevertheless, it is true, that I have never seen a case of pure neuralgia that it would not cure.

The following case may have some influence in convincing the profession of the efficacy of the medicine. A gentleman from Massachusetts came into my office in New York city, and introduced himself by saying that he had come to see me because he promised a friend that he would; and that he expected that I could benefit him. After examining him I said that his difficulty appeared to be simple neuralgia, and that I had never seen a case that I could not cure. He thought his would prove an exception.

To convince me of the gravity of his disease, he said that he had suffered from it for five years, four years in this country and one while absent in Europe for treatment. For the first six months while absent, he was under Brown-Séquard's care without any benefit. He then went to Paris and consulted Nélaton, but he was equally unsuccessful. From Paris he went to Vienna, and returned home after a year's trial, no better than when he left.

I prescribed for him. After two weeks, he wrote me saying, "your first prescription cured me, you hit the nail on the head the first time." This must be considered a strong case and one that had tested the skill of a large number of eminent physicians, both in this country and in Europe. I have other cases that had been treated for years in this country, without permanent relief.

I gave an old gentleman, who had given up all expectation of ever finding any relief, a small vial of medicine; on meeting him the next day, he joyfully remarked that he

had not had such a night's rest for years; that he slept quietly all night.

I will here remark that physicians should know the strength of the tinctures prescribed, as many of them are worthless. Yours very truly,

HENRY G. DAVIS, M.D.

REDUCTION OF COPPER IN FEHLING'S SOLUTION WITH CHLORAL HYDRATE.

WOODSTOCK, VT., November 12th, 1886.

MR. EDITOR, — On applying Fehling's test to a specimen of urine sent to me for examination, I found the copper reduced as with diabetic urine, while the specific gravity was only 1015. On inquiry, I found that a few grains of chloral hydrate had been added to the urine to prevent decomposition. On further trial I found that a very weak solution of chloral hydrate in clear water would reduce the copper. I have since experimented with it in different solutions and varying strength, and always with the same results. In two cases, after the internal administration of medicinal doses of chloral, the characteristic reaction was produced on testing the urine with the copper solution. Two days afterwards, the urine in neither case showed any signs of sugar.

The fact that chloral hydrate would reduce the copper solutions if added to urine, was new to me, and I think is not generally known. I do not remember seeing any mention of it in the text books or journals. Further investigation regarding the effect on the urine of the internal use of chloral is desirable. Very truly yours,

O. W. SHERWIN, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 6, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	680	265	21.90	14.70	3.60	1.95	9.45
Philadelphia	971,363	378	130	16.47	17.01	2.16	4.32	9.72
Brooklyn	630,000	293	108	21.08	11.90	3.42	2.72	9.18
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	180	63	12.10	12.10	2.20	1.65	7.15
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	124	37	12.15	11.34	4.05	.81	5.67
Cincinnati	325,000	135	61	34.04	15.54	6.66	2.22	14.80
New Orleans	238,000	110	32	29.09	13.65	10.92	6.37	2.73
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	57	—	7.00	19.25	3.50	1.75	—
Pittsburgh	190,000	80	37	27.50	7.25	—	7.25	8.70
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	20	7	25.00	20.00	40.00	40.00	—
Charleston	60,145	37	13	14.80	5.40	—	—	2.70
Worcester	68,383	18	9	38.88	11.11	—	11.11	16.66
Lowell	64,051	24	11	20.80	12.48	12.48	—	4.16
Cambridge	59,990	15	3	6.66	26.66	—	—	6.66
Fall River	56,993	17	8	5.88	5.88	—	—	—
Lynn	45,861	14	2	21.42	14.28	—	14.28	7.14
Lawrence	38,825	13	—	—	30.76	—	—	—
Springfield	37,577	1	5	26.66	13.33	—	—	13.33
New Bedford	33,393	10	3	—	10.00	—	—	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	12	2	16.66	8.33	—	16.66	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	6	1	16.66	—	—	—	16.66
Taunton	23,674	10	0	—	50.00	—	—	—
Haverhill	21,795	14	4	21.42	7.14	—	7.14	7.14
Gloucester	21,713	5	2	40.00	40.00	—	—	20.00
Brockton	20,783	—	—	—	—	—	—	—
Newton	19,759	2	0	—	—	—	—	—
Malden	16,407	8	2	12.50	12.50	—	—	12.50
Fitchburg	15,375	3	1	—	—	—	—	—
Waltham	14,609	3	0	—	66.66	—	—	—
Newburyport	13,716	7	2	14.28	—	—	—	—
Northampton	12,896	8	3	12.50	—	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,298: under five years of age 833: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 421, consumption 320, lung diseases 277, diphtheria and croup 173, diarrhœal diseases 79, typhoid fever 59, measles 33, malarial fever 25, scarlet fever 23, whooping-cough 11, cerebro-spinal meningitis eight, puerperal fever seven. From scarlet fever, Cincinnati eight, New York five, Pittsburgh four, Brooklyn three, Philadelphia, Gloucester and Newburyport one each. From measles, New York 20, Cincinnati and Pittsburgh five each, Brooklyn one. From malarial fever, New York 10, New Orleans seven, Brooklyn and Charleston three each, Baltimore two. From whooping-cough, New York and Brooklyn three each, Boston, District of Columbia, Worcester, Springfield and Haverhill one each. From cerebro-spinal meningitis, New York three, Pittsburgh, Worcester, Lowell, Fall River and Northampton one each. From puerperal fever, New York two, Boston, Cincinnati, Pittsburgh and Springfield one each.

In the 22 cities and greater towns of Massachusetts, with a population of 1,018,514 (population of the State 1,941,465), the total death-rate for the week was 14.74 against 18.07 and 20.23 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,003,817, for the week ending October 23d the death-rate was 19.3. Deaths reported 3,371: infants under one year of age 909: acute diseases of the respiratory organs (London) 290, diarrhœa 183, scarlet fever 83, measles 56, fever 49, whooping-cough 35, diphtheria 32.

The death-rates ranged from 12.7 in Nottingham to 33.5 in Preston; Birkenhead 14.8; Birmingham 17.8; Hull 20.2; Leeds 21.5; Leicester 18.3; Liverpool 24.0; London 17.7; Manchester 24.5; Newcastle-on-Tyne 22.2; Sheffield 20.5; Sunderland 21.3.

In Edinburgh 18.0; Glasgow 21.7; Dublin 20.5.

The meteorological record for the week ending November 6, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Nov. 6, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...31	29.887	50.5	54.1	46.8	97.0	88.0	94.0	93.0	E.	N.E.	N.E.	20	15	16	O.	O.	R.	—	—
Monday,... 1	29.943	50.9	58.0	47 3	93.0	85.0	87.0	88.3	N.E.	S.E.	N.W.	7	4	4	O.	C.	C.	—	—
Tuesday,... 2	30 095	49.3	59.1	46.2	77.0	76 0	95.0	82.7	N.	S.E.	S.	7	8	4	C.	C.	G.	—	—
Wednes... 3	29.991	56.5	65.6	45.1	100.0	65.0	89.0	84.7	S.	S.	S.W.	6	11	4	G.	F.	C.	—	—
Thursday, 4	29.983	52.1	65.5	42.4	90.0	34.0	56.0	60.0	S.W.	N.W.	W.	10	20	10	O.	C.	C.	—	—
Friday, ... 5	30.228	49.8	58.8	38.3	67.0	40.0	85.0	64.0	S.	S.	S.W.	2	14	8	C.	C.	C.	—	—
Saturday,. 6	29.922	53.0	58.9	46.4	98.0	100.0	94.0	97 3	S.	E.	S.W.	3	14	4	G.	R.	O.	22.00	0.69
Mean, the Week.	30.004	51.7	60.0	46.3				81.4											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 6, 1886, TO NOVEMBER 12, 1886.

WRIGHT, J. P., major and surgeon. From Department of Texas to Department of Missouri, for duty as attending surgeon at Leavenworth Military Prison, Fort Leavenworth, Kan.

FORMARD, W. H., major and surgeon. From duty as attending surgeon headquarters, Division of the Missouri, and examiner of recruits at Chicago, Ill., to Department of Dakota.

HUBBARD, V. B., major and surgeon. From Department of Arizona to duty as attending surgeon at headquarters, Division of the Missouri, and as examiner of recruits at Chicago, Ill. S. O. 257, A. G. O., November 4, 1886.

LORING, L. Y., captain and assistant surgeon. Sick leave of absence further extended three months on surgeon's certificate of disability. To be relieved from duty in Department of California, and, on the expiration of his present sick leave of absence, will report by letter to the Surgeon General of the Army. S. O. 262, A. G. O., November 10, 1886.

MOSELEY, E. B., captain and assistant surgeon. Assigned to duty as attending surgeon in San Francisco, Cal. S. O. 94, Division of the Pacific, November 1, 1886.

PERLEY, HARRY O., captain and assistant surgeon. Granted leave of absence for four months on surgeon's certificate of disability. S. O. 257, A. G. O., November 4, 1886.

BARROWS, CHARLES C., first lieutenant and assistant surgeon. Ordered to report to commanding officer St. Francis Barracks, St. Augustine, Fla., for duty at Fort Marion. S. O. 180, Division of the Atlantic, November 10, 1886.

PHILLIPS, JNO. L., first lieutenant and assistant surgeon. Granted leave of absence for one month with permission to apply at headquarters, Division of the Missouri, for an extension of one month. S. O. 116, Department of Dakota, November 2, 1886.

EWING, CHARLES B., first lieutenant and assistant surgeon. Ordered from Fort Supply, Ind. Ter., to Fort Leavenworth, Kan., for duty. S. O. 126, Department of Missouri, November 6, 1886.

IVES, FRANCIS J., first lieutenant and assistant surgeon. Ordered to proceed to and take station at Fort D. A. Russell, Wyo. S. O. 145, Department of Platte, November 4, 1886.

PROMOTION.

O'REILLY, ROBERT M., captain and assistant surgeon. To be major and surgeon, November 1, 1886, *vice* Clements, deceased.

APPOINTMENTS.

CLENDENIN, PAUL, first lieutenant and assistant surgeon, November 5, 1886.

ANDERSON, CHARLES, L. G., first lieutenant and assistant surgeon, November 5, 1886.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING NOVEMBER 6, 1886.

AMES, R. P. M., passed assistant surgeon. Relieved from duty at Marine Hospital, New York, to assume charge of Marine Hospital, Vineyard Haven, Mass., November 1, 1886.

URQUHART, F. M., passed assistant surgeon. To proceed to Norfolk, Va., for duty, November 4, 1886.

YEMANS, H. W., passed assistant surgeon. Relieved from duty at Marine Hospital, San Francisco, Cal., to assume charge of the Service at Galveston, Tex., November 1, 1886.

WASDIN, EUGENE, passed assistant surgeon. When relieved, to proceed to New York, for duty at Marine Hospital, November 1, 1886.

WILLIAMS, L. L., assistant surgeon. Relieved from duty at Marine Hospital, Wilmington, N.C., to proceed to Pittsburgh, Pa., for temporary duty, November 5, 1886.

PERRY, T. B., assistant surgeon. Relieved from duty at Marine Hospital, St. Louis, Mo., to proceed to San Francisco, Cal., for duty at Marine Hospital, November 1, 1886.

SOCIETY NOTICE.

GUILD OF S. LUKE.— There will be a meeting of the Guild of S. Luke, the Evangelist and Physician, at Calvary Chapel, 4th Avenue and 21st Street, New York City, at 12, M., Friday, November 19, 1886. At 2, P.M., a public service will be held in the chapel, to which physicians and medical students of the regular medical profession who are communicants of the Protestant Episcopal Church, and priests and deacons of the same, are cordially invited to be present. Addresses are expected concerning the objects and working of the Guild, by Bishop Quintard, of Tennessee, and others.

W. THORNTON PARKER, M.D., *Provost*,
Newport, R. I.

DEATHS.

Died in Portland, Me., November 12, 1886, Francis Patrick Scully, M.D., M.M.S.S., aged thirty-four years.

Died in Webster, Mass., November 8, 1886, Frederic Davis Brown, M.D., M.M.S S., aged sixty-two years.

BOOKS AND PAMPHLETS RECEIVED.

Meconeuropathia. By C. H. Hughes, M.D., St. Louis, Mo.

The Surgery of the Pancreas, as based upon Experiments and Clinical Researches. By N. Senn, M.D. (Reprint).

Fifty Cases of Abdominal Section. (Second Series). James B. Hunter, M.D. (Reprint).

Medical Education and Medical Colleges in the United States and Canada, 1765–1886. Illinois State Board of Health. Springfield, Ill.

Observations and suggestions in regard to the Method of Operating during the same Anæsthetization for Lacerations of the Cervix Uteri and Ruptured Perineum. By Thos. A. Ashby, M.D., Professor of Gynæcology in the Baltimore Polyclinic and Post-Graduate Medical College, etc. Baltimore: 1886.

The Curette as a Diagnostic and Therapeutic Agent in Gynæcology and Obstetrics. By B. Bernard Browne, M.D., Professor of Diseases of Women in the Woman's Medical College of Baltimore, etc. Baltimore: 1886. (Reprint.)

Hog Cholera. D. E. Salmon, Chief of the Bureau of Animal Industry: His Investigations into the Cause and Nature of Hog Cholera critically considered by Frank S. Billings, Director of the Patho-Biological Laboratory and Experiment Station of the University of the State of Nebraska.

Lecture.

TWO CASES OF MALIGNANT OR ULCERATIVE ENDOCARDITIS.

A CLINICAL LECTURE DELIVERED AT THE PHILADELPHIA HOSPITAL,

BY JOHN H. MUSSER, M.D.,
Physician to the Hospital, and Pathologist to the Presbyterian Hospital.

I HAVE here some specimens showing the lesions of malignant or ulcerative endocarditis as seen in a case recently in the wards of the hospital, and also some photographs of a case which came to my notice in the Presbyterian Hospital some time ago. I also have here the specimens from the latter case, and shall demonstrate to you as well as I can, the pathological lesions. In this heart there are seen on the leaflets of the mitral valve, a fringe of soft vegetations which were very friable when first removed, and in fact still are easily broken. They project into the ventricle and auricle, interfering seriously with the circulation. They are also seen on the aortic valves, and in this instance we find the rather rare occurrence of the lesions on the tricuspid and pulmonary valves. On microscopical examination of a teased preparation, these larger masses seemed to be made up of a granular substance in which were innumerable micrococci. In addition to this hyaline structureless appearance of the mass, a croupous or fibrinous exudation, cell proliferation was seen, with leucocytes in large numbers. The micrococci not only invested the proliferating membrane, but also dipped deeply into the lymph spaces of the neighboring structures looking not unlike the penetrating pegs of epithelioma. The smaller masses were less free from granular material and contained more of the cellular structure, and showed especially, old connective tissue elements most markedly. These proliferating structures while to a certain extent limited to the valves, are in this case also seen on the chordæ tendineæ, and on the wall of the heart itself, budding out from the endocardium.

In cases of malignant or ulcerative endocarditis, not only do we find these proliferative masses, but quite frequently we also find ulcerations with or without fungoid growths of inflammatory material. These ulcerations are found in the valve and in the heart muscle, and may lead to perforation. Microscopical examination of such ulcers shows abundant micrococci and the presence of round cells and granulation tissue. The ulceration may perforate the valve or the heart muscle itself, and lead to the development of aneurism, or to leakage from one cavity to another, or from the cavity of the heart into the pericardium, causing a fatal result. In addition to the fungous growths and these ulcerations, there are found in some instances, minute abscesses. The pus in these abscesses contains an abundance of micrococci.

In this second specimen the mitral valve is affected alone. The enormous degree of proliferation of the new growth can be readily seen. That on the anterior leaflet of the mitral valve projects into the ventricle, while that on the posterior leaflet projects into the auricle.

The presence of this granular material and the existence of micrococci in the new growths, would of necessity lead us to infer that the blood was infected, and such is the case. Microscopical examination shows abundance of micrococci floating free in the blood, and some are also found in the leucocytes. The infection of the blood and the presence of micrococci in these free situations where they can be readily disturbed by the blood current, lead us to expect structural changes in the peripheral circulation. By the force of the blood current, micrococci, cells and granular debris are carried into the distal circulation and form infarcts. When the disease is on the left side of the heart, these infarcts are seen in almost all parts of the arterial circulation; for instance, in the case recently under observation, there were innumerable infarcts in the skin, and nearly all the internal organs. Microscopical examination would show in addition to the hæmorrhage of the infarct, the presence of micrococci, occluding some minor capillary. The mucous membrane and the serous membranes may also be similarly affected in these cases. In this instance, infarcts were seen in the peritoneum and in the pericardium over the surface of the heart. The mucous membrane of the gastro-intestinal tract, showed numerous infarcts. The nature of these infarcts depends largely upon the nature of the primary infecting material. If there is an abundance of pus, they rapidly change into abscesses. In other instances, they remain as simple hæmorrhagic infarcts, and if the patient lives, undergo the changes usually seen after emboli. Here is a section of the intestine which shows the hæmorrhages in the mucous membrane. In this case, the most remarkable lesions were the number and extent of the infarcts in the stomach, particularly toward the cardiac end. In the first case, the only infarcts found were in the kidneys. There was also most marked glomerulo-nephritis. In the second case, the renal infarcts were not so large, but there were innumerable small ones in the capsule of the kidney, and microscopical examination would in all probability reveal the evidences of glomerulo-nephritis. The spleen, you observe, shows the infarcts very distinctly.

Not only are the lesions found in these structures, but capillary emboli may also occur in the brain. And not alone are the capillaries involved, but large plugs may be broken off and carried into the cerebral arteries, cutting off the circulation of a large portion of the brain structure producing hemiplegia and other grave cerebral symptoms. In the second case, a large thrombus had formed in the iliac artery, with obstruction to the blood supply of the lower extremity. It was evidently a recent formation, as it had produced no symptoms during life.

In addition to these changes which are noted in most cases of malignant endocarditis, namely, the changes in the structure of the valves; of the endocardium and of the heart muscle and changes in the blood, and secondarily, the presence of emboli and infarcts throughout the arterial circulation, there are often other lesions. For instance, in many cases the lesions of rheumatism or pneumonia or diphtheria are present. In other cases there are found in some portion of the body small abscesses, disease of the bones or some suppurative process. In such cases the endocarditis is secondary to the disease in the peripheral structures. Many cases, for instance, have been reported in which a pelvic abscess had been the primary origin of the disease. In the same way, in disease of the bone and in rapidly growing cancer which has undergone inflammatory changes, malignant endocarditis may develop.

These anatomical conditions have led to the division of the disease into three classes: First, those cases in which there are present only lesions of the heart and of the blood, and lesions due to emboli, are classed as cases of idiopathic or spontaneous malignant endocarditis; Second, those cases in which the lesions of rheumatism or pneumonia are found in addition, are classified simply as cases of associated malignant endocarditis; Third, those cases in which the disease is due to the presence of suppurative inflammation in the distal circulation or to a general septic process, are classified as cases of secondary malignant endocarditis.

By the knowledge of the anatomical characters of the disease, one can readily trace and keep well in mind the clinical history of these cases. First, from the fact that micrococci are found in the blood and in the inflamed structures, we should infer that there must be some general symptoms due to the septic process, and such is eminently the case. Second, the severe local cardiac lesion produces symptoms characteristic of obstruction in the orifices, while finally, the character of the primary lesion determines the presence and nature of the third class of symptoms, namely, those arising from peripheral infarcts and inflammations.

Cases of malignant endocarditis are characterized by rigors, irregular fevers and sweats, and by the occurrence in the later stages, of jaundice due to disorganization of the blood. There may also be vomiting and diarrhœa which examination shows is not dependent upon organic lesions of the stomach and bowels, but on the septic process. Enlargement of the spleen, another accompaniment of the septic process is also observed. The affection is sometimes accompanied by inflammation of the serous membranes, especially of the brain. Indeed, the only prominent symptoms of malignant endocarditis may be cerebral.

From the blood lesions, depending upon the extent to which the blood has become disordered and infected with the micrococci, and secondarily, upon the reaction of the structures to the micrococci in the blood, we have different types of the disease. Clinical experience has led us to divide the cases into four classes, the pyæmic, the typhoid, the cerebral and the cardiac. The pyæmic type, as its name indicates, resembles pyæmia in its symptoms and course. The cerebral type simulates inflammation of the meninges of the brain in its symptoms. Possibly without any symptoms referable to the heart, there will be pain in the head and in the back of the neck, with high fever, drowsiness, stupor, convulsions and coma. In the typhoid type, the symptoms simulate those of typhoid fever in many respects, the affection beginning with irregular chills, irregular fever, and being accompanied by profuse perspiration, emaciation, low muttering delirium, a dry, brown tongue, and even the occurrence of diarrhœa. In the cardiac form of the disease, the symptoms depend not so much upon the condition of the blood, as upon the primary cardiac lesions. While a healthy heart may undergo the changes which I have demonstrated to you, a diseased heart is much more likely to do so. In many cases of cardiac disease, the diseased structures seem to furnish a hot-bed for the development of the micrococci. More cases of malignant endocarditis are found in old cases of cardiac disease than in any other class. In the cardiac type, we have in addition to the symptoms referable to the heart, namely, dyspnœa, pain and distress about the præcordia, and palpitation,— also irregular fever and sweats.

The local symptoms due to the presence of this severe and extensive inflammation of the cardiac structure are pronounced and distressing. From the appearance of this enormous outgrowth on the mitral valve (second case), you can infer considerable obstruction to the blood-current, and hence the production of a murmur. So, in all cases, a murmur is heard at the orifice affected. Sometimes it is heard at several points, according to the diverse seat of the lesion. The murmur is usually strong and low in pitch. It may be systolic or diastolic. It is conducted or transmitted in accordance with the laws that govern murmurs, but differs in the variation of its character. From time to time it may be high or low pitched, loud or soft, strong or feeble, indeed, may temporarily disappear, such changes depending on the change of the outgrowths by loosening and floating off in the blood-stream. With the murmur, would arise other evidence of obstruction, such as dilatation of one or more of the chambers of the heart, with increase in the area of dulness and of impulse. Under these circumstances, the heart acts more violently, is likely to be irregular and very frequent, while palpitation and cardiac dyspnœa would be present.

Finally, we look to the nature of the central lesion for the character of the symptoms developed in the peripheral circulation. If largely purulent in character, the infarcts would rapidly be converted into abscesses. In most instances, simple hæmorrhagic infarcts are observed. In both, crococci abound.

The infarcts or capillary hæmorrhages are observed in the skin, the conjunctivæ, and the external mucous membranes. They are seen in the retina, and their presence in the gastro-intestinal or urinary tracts may be inferred from the occurrence of blood in the natural discharges, or of hæmorrhages from these localities. Their presence in the brain is determined by the phenomena common to cerebral emboli. In the skin, these infarcts are most abundant, and are distinguished by their bright red color and their persistence on pressure.

The case from which the first specimens were removed was a typical example of malignant endocarditis, and I shall ask your attention to the prominent points in its history: W. J.,[1] white, was admitted to the medical wards of the Presbyterian Hospital, October 3, 1884, suffering with rheumatism, localized in the left knee and the right shoulder and elbow. He stated that he had been feeling badly for some time, and had been losing flesh and strength. Previous to the recent illness he had had small-pox, syphilis, and gonorrhœa. The fever was very high, and out of proportion to the local symptoms. It was irregular, and at times there were profuse, exhausting sweats. This case was typical in its marked remissions and intermissions, the temperature sometimes going as high as 105°, and on one occasion, going as low as 96.5°. Some time after admission, the patient complained of pain about the præcordia, and, on examination, a murmur at the mitral valve was found. No particular stress was laid upon the cardiac trouble, which was regarded as a simple endocarditis, which often arises in the course of rheumatism. During the course of the rheumatism, he had, one month after admission, an attack of pneu-

[1] See Transactions College of Physicians of Philadelphia, 1886.

monia of the lower lobe of the right lung. The fever continued and the exhaustion became extreme, and finally, one day, after a chill, congestion of the lungs took place, and death resulted. The duration of the illness was sixty-eight days.

An interesting feature of this case was the development of malignant endocarditis in the course of rheumatism, and the occurrence, during the disease, of pneumonia.

Pneumonia is often a primary affection in this disease. Moreover, in those cases in which the right heart is affected, an infarct may form in the lung, causing pulmonary apoplexy and associate pneumonia, and such was possible in this case. Otherwise, it is not liable to complicate endocarditis.

The irregular fever, the exhaustive sweats, and the diarrhœa due to sepsis were marked. The cardiac murmur and the dyspnœa caused by the local lesion were present, but the occurrence of infarcts was not demonstrated during life. Such is a summary of the interesting clinical features observed.

The case from which the second specimens were removed was N. S., aged twenty-seven years, a German, who was admitted to my wards in this hospital, August 26, 1886. At the same time, her husband and children were admitted suffering with some febrile complaint, thought to be malarial. This is important, as indicating that the family were in straitened circumstances, and probably living in an unhealthy locality. The patient had been ill for six weeks with an irregular fever, said to be malarial. At this time she was nursing an infant one year of age. The labor had been natural, and she had a good getting up. Three years ago she had an attack of malarial fever, and at one time had rheumatism of the leg. She never had any other ailments, and was strong and hearty, and of temperate habits. The family history was good. The parents and several brothers and sisters are still living. One sister died of pneumonia; the cause of death of another is unknown.

On admission, it is noted that the patient is prostrated, and complained of chilly sensations and of nausea, and sweat profusely. The tongue was clean and moist. The bowels were loose, there being five movements in the twenty-four hours, the stools thin and greenish in color. The nausea disappeared in the course of twelve hours. There was some tenderness in the epigastrium, but none in the iliac fossa. The spleen extended in the axillary line, from the sixth rib to the margin of the ribs. There was no eruption. Both cheeks were flushed, the skin and mucous membranes were pale, the hands quite anæmic, and the body somewhat emaciated; the mind was clear. The lungs and heart were normal. A nutritious diet, with stimulants and quinia, were ordered. Five days later a cardiac murmur was detected. The general condition and symptoms were about the same. The apex-beat of the heart was in the fifth interspace, in the nipple line. The impulse was moderately feeble; there was no thrill. The pulmonary second sound was somewhat accentuated. A low-pitched, systolic murmur was heard at the apex, and transmitted into the axilla. There was no murmur at the aortic orifice. The pulse was rapid, small, and feeble. There was no cough nor dyspnœa. Ulcerative endocarditis was suspected.

September 8th. It is noted that the fever has continued, in spite of the use of quinine. There were profuse sweats during the day, but not at night. The anæmic appearance of the face was marked, and the patient was evidently losing flesh and strength. The diarrhœa continued. The cardiac murmur had increased in intensity, and could be loudly heard at the angles of both scapulæ, especially on the right side. There was marked tenderness on pressure, and some pain in the third left intercostal space. At the base of the right lung, impaired resonance and fine, moist, crepitant râles were observed. A few râles were also found at the right apex. There was short, high-pitched, jerking inspiration and prolonged expiration at the right apex, and high-pitched inspiration at the left.

September 12th. Two days ago, two small, purpuric spots were observed on both upper eyelids, and to-day, hæmorrhagic infarcts are seen all over the trunk and on the upper extremities, pin-head to split-pea size, bright red in color, not disappearing on pressure. Hæmorrhages in the bulbar and palpebral conjunctivæ of both eyes, at the inner and outer canthus, were also seen. The patient was rapidly losing flesh and strength, and the sweats continued. The abdomen was distended in the epigastric and umbilical region, and a large, wavy impulse was detected in the epigastrium. Nausea and vomiting had recurred during the past five days, and the diarrhœa continued. The spleen was tender, and could be readily felt below the margin of the ribs. The pulmonary signs had disappeared. There were no cerebral symptoms. The heart's action was irregular, and the pulse small, feeble, rapid, and dicrotic. In the second interspace to the left of the sternum, a perceptible thrill was present. The systolic murmur was not so loud at the apex as it had been. Over the third rib, a loud, booming, systolic murmur, with a "grinding" element, was heard. In the second interspace to the left of the sternum, there was heard a loud, rough, high-pitched murmur. The pulmonary second sound was muffled. The murmur over the tricuspid valve was not so distinct as over the mitral valve. There was no œdema, and the mind continued clear.

The day following there was a chill. The urine was scanty, high-colored, and contained blood and a small quantity of albumen. Blood and epithelial tube-casts were found in abundance. The chill was repeated the next day (14th). The patient was a little more drowsy, but there was no delirium. New capillary infarcts were seen about the neck. Infarcts also involved the lips and end of the tongue. The conjunctivæ were slightly icterode. For half an hour there was severe dyspnœa. The exhaustion increased, and the patient died in the early morning of September 15th.

I have here the temperature chart showing the course of the fever during the disease. As will be seen, there were marked remissions. Twice the temperature was above 105°, and on one occasion it reached 105.8°. At the same time the pulse was excessively rapid and feeble.

You will observe here again symptoms due to the general process, symptoms due to the local cardiac trouble, and symptoms due to the infarcts. The case presents a most typical example of the evolution of the clinical phenomena of malignant endocarditis.

It is of interest on account of the difficulty of diagnosis. It was at first thought possible that the case was one of malarial fever of a remittent type. The failure of large doses of quinia to control the fever, the appearance of the infarcts and the development of the cardiac murmur, led us very soon to abandon the idea

of malaria, and look upon the case as one of ulcerative endocarditis. Until the development of the hæmorrhagic infarcts in the skin and the occurrence of renal emboli there was not sufficient evidence to warrant a positive diagnosis, however. Typhoid fever was thought of. Many of the cases of malignant endocarditis which have not been regarded as cases of intermittent fever have been considered to be cases of typhoid fever. In this case there was diarrhœa, enlarged spleen, and the occurrence of fever with prostration. In other cases the typhoid symptoms are more marked than in our case, so that a mistake in diagnosis is readily made. In this case, as in most instances, the temperature was not characteristic of typhoid fever. In the latter disease, the temperature follows a certain regular course; further the abdominal symptoms are more marked than in ulcerative endocarditis, the lesions of the heart are absent, the pulse is not so frequent, the sweats are not so profuse, the hæmorrhagic infarcts are wanting, and the rose-colored spots characteristic of typhoid fever are found. By bearing these points in mind a mistake is not apt to be made. A mistake is most likely to be made in those cases of typhoid fever in which the temperature range is very irregular.

There are some cases in which typhoid fever occurs in a person who already has heart disease. This may obscure the diagnosis, but the uniform character of the murmur, the absence of capillary infarcts, the absence of jaundice and the presence of marked abdominal symptoms would lead us to a correct diagnosis. A point in the diagnosis of recent malignant endocarditis from long-standing heart disease complicating typhoid or intermittent fever is, moreover, the presence of either hypertrophy or dilatation in the latter case. You may not be able to differentiate the cases from the seat or the character of the murmur, but if these changes in the structure of the muscles were noticed, you would infer that the cardiac lesion was of long standing, and that a febrile affection had occurred in a subject of chronic heart disease.

At one time, before the cardiac symptoms appeared, it was thought that this might be a case of tuberculosis. The sweats, irregular fever, prostration and the occurrence of râles in the lungs pointed in this direction, but in our case, as in other cases of malignant endocarditis, there was wanting a symptom which is usually present in tuberculosis; that is, excessively rapid respiration. There was also absence of cause which is, however, not of much significance in acute miliary tuberculosis. The appearance of the cardiac symptoms and the peculiar range of temperature, led us to eliminate this affection.

I have already mentioned that malaria is often simulated by ulcerative endocarditis. Many cases treated as ague, have turned out to be instances of the pyæmic variety of malignant endocarditis. The presence of the germ of Laverran in the blood, would at once confirm the diagnosis of ague, or the presence of pigment in the blood and tissues would point to malaria. The cases are sometimes very difficult to settle, and due attention must be paid to their minor details.

Where a murmur develops in the course of articular rheumatism, it is sometimes difficult to decide whether it is due to a septic process or to a simple endocarditis which frequently complicates rheumatic affections. If in the course of rheumatism ulcerative endocarditis sets in, the temperature will be out of proportion to the rheumatic manifestations. The physical signs differ from those of simple endocarditis. In the latter there is a soft, blowing, low-pitched murmur which is not so widely transmitted as in the former. The murmer of simple endocarditis is persistent and of one character continually, while the murmur of malignant endocarditis varies in seat and in intensity from day to day. One day it may appear to be limited to the mitral valve, the next day, to the aortic valve. This variation depends upon the amount of exudation present, and whether or not it is set free in the course of the disease. If a large mass of vegetation disappears from the valve, the symptoms will change in character. This is not the case in simple endocarditis. Bearing in mind this difference, and remembering that in simple endocarditis, infarcts do not occur, that jaundice does not develop, and that the spleen does not become enlarged, the differential diagnosis can usually be made.

The case which I now bring before you is one of rheumatism extending over a long period of time, and presenting some features which might lead one to infer the occurrence of malignant endocarditis, but there are some other features which negative that idea entirely. The points suggesting malignant endocarditis are the irregular temperature, as is seen from the chart, the long continuance of the case, the frequent exacerbations after a short period of normal temperature and the presence of cardiac lesion. There are, however, two or three points which are in opposition to this view. In the first place, each exacerbation of fever occurred at a time when there was a fresh attack of joint pain. During the past two weeks, the joint symptoms have been limited to the knee, and have not been very marked. The pain complained of is, I think, at present largely of an hysterical nature. The patient has been under observation six weeks. There is present a murmur which during the whole time that the patient has been under observation has not changed its character. The murmur is limited to the mitral valve, is low pitched and soft and blowing in character. These are the characters of the murmur of recent endocarditis. Moreover, the murmur is not accompanied by the profound disturbance of circulation that is found in cases of malignant endocarditis where there are large vegetations projecting into the lumen of the valves.

A method of differential diagnosis which might be of value has not been referred to. Capillary hæmorrhages are known to occur in the fundus of the eye before they appear in the superficial structures, and an examination of the eye-ground would therefore be of great service in the recognition of endocarditis.

The prognosis of malignant endocarditis is, of course, extremely grave. There are some cases which are said to have recovered, but in these cases, there is an element of doubt. It seems impossible that a mistake could be made where the local cardiac trouble, with the infarcts and the pyæmic symptoms are present. The reason that the disease has not been oftener diagnosticated is because it has not been suspected.

The treatment, as will be inferred from my remarks, is unsatisfactory. In the large number of cases it can only consist in the treatment of symptoms. The presence of micrococci in this disease has only recently been demonstrated, and its septic character shown. Remedies to counteract the septic process have been administered. One case has recently been reported by Dr. Samson, in which the administration of sul-

pho-carbolate of soda in thirty grain doses three times a day, had been followed by cure of the patient. Apart from the administration of the sulpho-carbolates, the use of carbolic acid and the bichloride of mercura in minute doses I believe would be valuable. Stimulants and iron in large doses, if the stomach will bear it, are indicated. It is, however, usually not possible to give iron, on account of the vomiting. The treatment of the pyrexia also requires attention. In our patient it seemed that the administration of antipyrine in five grain doses every third hour with a stimulant to prevent the depressing effects of the drug, was of advantage. Certainly the temperature range was not so great after the use of this drug as before, but as we have seen from the chart of the first case, the temperature is very variable, so that it is difficult to judge as to the effect of drugs. The patient also received three drops of tincture of belladonna three times a day, for the control of the exhausting sweats. The diet was of the most nutritious and stimulating character, but as happens in most of these cases, all treatment was without avail.

Malignant endocarditis is a disease that was not recognized until within recent years. It is a rare disease. This is shown by the fact that Dr. William Osler, in a thorough search of the literature, was able to find only 209 cases. Since his admirable lectures were delivered in London two years ago, a great impetus has been given to the study of malignant endocarditis, and many cases are now recognized which before was entirely overlooked. The lines of investigation which have been pursued and which are still being pursued are in the direction of the explanation of the septic process, and the relation of malignant endocarditis to pneumonia, rheumatism and other infectious diseases.

Original Articles.

MEDICAL EXPERT TESTIMONY, AS GIVEN IN THE COURTS AT PRESENT.[1]

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Some time after I had the honor to receive the appointment of orator, or reader for this occasion, I called on the secretary of the Society for the purpose of informing myself as to the nature of the papers presented by my predecessor at these annual meetings.

The principal object of this inquiry was to determine, if possible, why the reader, at these annual gatherings, is styled the orator. While this investigation did not quite satisfy the object of the research, it did inform the writer that some of the papers, from the subject, the eloquent and masterly manner of treatment of the subject matter, were well worthy the name of oration or essay; still a very large majority of them were descriptions of practical experiences, bringing together the results of careful observation and painstaking research, some on one subject and some on another, but all presented to the Society in a clear and forcible way, bringing to the members such profit as can only come from the relating of actual experiences, practical lessons to assist us, one and all, in our every day work.

[1] Address delivered before the Middlesex South District Medical Society, April 21, 1886.

I am sure the Society, made up, as it is, almost wholly of busy, hard-working practitioners of medicine, who have snatched an hour or two from their daily rounds of work to assemble here, much prefer to hear from me the result of some practical personal observation, rather than such a discussion as must of necessity very largely make up the oration or essay, even were I able to present the latter in an acceptable manner; for this reason, I have chosen for my subject one in some phases of which another more able than myself might be eloquent in oratory, or profound in essay, but which I purpose to treat in a plain, practical way, giving personal experiences and personal observation that have come to me in the last dozen years. That subject is medical expert testimony, as given in the courts at present.

The principal reason for selecting this subject for discussion is the standing, or rather, want of standing of the medical expert witness, not only before both the court and the bar, but also in the eyes of the community; the position of such a witness, as he stands to-day, can be described in a few words. With no influence toward bringing about the high purpose for which he has been summoned — that of an instructor of the court — without the respect of either the judge, the bar, or the jury, he is a discredit to himself and the, great profession to which he belongs.

During quite an experience in court, with a single exception, I have never heard medical testimony commended by the presiding justice, and that exception, I am happy to say, Mr. President, was in relation to evidence given by one of the oldest and most eminent members of this Society. Often I have heard the judge, in his charge to the jury, refer to such testimony in a way anything but complimentary to the medical witness, and quite as often it is ignored altogether.

Dr. Phelps, in an annual address delivered before a medical society in Ohio, quotes the following: "Professor Chaille, speaking for the medical profession, declares that with the power of medical science crippled at coroner's inquests, then prostituted by the partisan opinions of incompetent experts, then presented by interested advocates, and at last, when emasculated of all vigor, submitted for decision to those unable to estimate its weight, what wonder that such gross misapplication of medical knowledge brings upon it that public contempt which belongs to methods so monstrous, and to which true medical knowledge is a helpless, pitiable, disgusted victim?"

Lord Campbell says "that skilled witnesses come with such a bias on their minds to support the cause in which they are embarked, that hardly any weight should be given to their evidence." Chief Justice Chapman, of this State, observes: "I think the opinions of experts are not so highly regarded as they formerly were, for while they often afford great aid in determining facts, it often happens that experts can be found to testify to anything, however absurd." Judge Davis, of Maine, goes even farther, and says: "If there is any kind of testimony that is not only of no value, but even worse than that, it is, in my opinion, that of medical experts."

Judge Redfield, of Vermont, also says: "There is but one opinion as to the fact that this kind of testimony is extremely unsatisfactory."

Only a few months ago, I heard one of the most learned and respected members of the bar state to the

court, "Medical men are employed in these cases (suits for damages for personal injuries) just as lawyers are employed, to work up their side of the case, so far as the medical facts are concerned," and he went on to argue that it was perfectly right and proper that they should be so employed. This statement, of course, cannot be denied, but the argument is in no way in keeping with the purpose for which the expert is summoned.

As I have said before, my reason for selecting this topic for discussion is this discreditable standing of the medical expert as he appears before the courts to-day —a standing, as may be seen from the above quotations, recognized on all sides as a disgrace to our profession, a blot on the fair name of truth and justice, and a by-word and reproach in the eyes of the world. Who are the men, and what are the causes that have brought about this discredit upon the medical expert witness? Are they the quacks, the charlatans, the pretenders in medicine? From my own observation, I must answer emphatically, no; these irregular practitioners rarely appear on the witness stand. For nearly a dozen years I have been particularly interested in this matter, and during that time have taken every opportunity to hear and read medical testimony. This experience has taught me that the medical men who appear in our courts as witnesses are members of the regular profession. Some of the causes which have led to this condition of things I shall discuss farther on.

What is the nature and object of expert testimony, and who are the experts? Bouvier, in his law dictionary, gives, as a definition of the word expert, the following: "Persons selected by the court or parties in a cause on account of their knowledge or skill to examine, estimate, and ascertain things, and make a report of their opinions; witnesses who are admitted to testify from a peculiar knowledge of some art or science, a knowledge of which is requisite or of value in settling the point at issue."

Greenleaf, on evidence, says: "On questions of science, skill, or trade, or others of the like kind, persons of skill, sometimes called experts, may not only testify to facts, but are permitted to give their opinions in evidence. Thus the opinions of medical men are constantly admitted as to the cause of disease or of death, or the consequences of wounds; and as to the sane or insane state of a person's mind, as collected from a number of circumstances, and as to other subjects of professional skill; and such opinions are admissible in evidence, though the witness founds them not on his own personal observation, but on the case itself, as proved by other witnesses on the trial." Smith, in his leading cases, says: "It appears to be admitted that the opinion of witnesses possessing peculiar skill is admissible whenever the subject matter of inquiry is such that inexperienced persons are unlikely to prove capable of forming a correct judgment upon it without such assistance; in other words, when it so far partakes of the nature of a science as to require a course of previous habit or study in order to an attainment or knowledge of it."

Elwell, in referring to this matter, says: "Extra knowledge on questions of science, skill, trade, business, or other matters requiring special knowledge, qualifies the person thus informed to give opinions in courts of justice; this is contrary to the general rule that the witness must confine himself to facts, and leave the conclusion of those facts to be determined by court or jury under oath. An opinion is the judgment which the mind forms on any proposition, statement, theory, or event, the truth or falsehood of which is supported by a degree of evidence that renders it probable, but does not constitute absolute knowledge, truth, or certainty. These opinions, or conclusions of judgment, which make up such opinions of experts are the same in substance as the verdict of a jury or judgment of a court, which is nothing more than the opinion of such jury or court as to what is established by the facts in the case. This conclusion or opinion, in the latter case, is given under the sanction of an oath; so is that of the expert."

The professional witness to a certain extent assumes the duties of the jury in that he makes up opinions for them.

Reese speaking of legal medicine, says: "It should require no argument to show the importance of the knowledge of this science to the student and practitioner of both the professions of medicine and law. The former cannot entirely evade its claims, although he may seek to do so, since the very nature of his profession together with his assumed public position as an accredited physician renders him liable at any moment to be confronted with a case involving the intricate questions of homicidal, suicidal, or accidental death, of infanticide, of criminal abortion, of rape, of drowning, and of numerous other similar cases, all of which when they become the subjects of legal investigation must necessarily depend for their proper elucidation chiefly, if not solely, upon the physician who has previously given his professional attendance in the case, and who must subsequently give his evidence before the court and jury. How important then that the practitioner of medicine, even though he may have no special leaning toward legal medicine, should become acquainted, at least with the general principle and leading facts of this science."

What higher and more honorable position could a member of the medical profession occupy than the one indicated by the above extracts from the writings of the most able authors on this subject; provided the medical witness had the high standing he should have in the courts, a position that makes him, not only an instructor to the court and jury, but one that often compels him to assume the function of the latter, a position that in some respects is higher than that of the judge himself, for he in his judicial capacity, can give to the jury only the principles of law by which they are to be guided in making up their decision, and he can in no way give his own opinion as to what that decision should be.

How much depends upon what the medical expert may do and say on the witness stand! A single answer, and that answer purely a matter of opinion, may determine the disposition of thousands of dollars, yes, or upon a single answer may depend the life of a human being. An eminent writer has said, "No class of witnesses disposes by their testimony, of larger amounts of money than this class, the greatest fortunes ever collected together by financial ability have been distributed by medical men upon the witness stand in contests over the validity of wills. The law books are full of illustrations of this fact." Dr. Rush, in closing a lecture, delivered at the University of Pennsylvania in 1810, says: "To animate you to apply yourselves to the study of all the subjects enumerated in the introduction to our lecture, I beg you to recollect the extent

of the services you will thereby be enabled to render to individuals and the public, fraud and violence may be detected and punished, unmerited infamy and death may be prevented, the widow and the orphan may be saved from ruin, virgin purity and innocence may be vindicated, conjugal harmony and happiness may be restored, unjust and oppressive demands upon the service of your fellow citizens may be obviated, and the sources of public misery in epidemic diseases may be removed by your testimony in courts of justice."

Elwell, in his work on "Malpractice and Medical Evidence," in relation to the history of medical evidence, says: "Although medicine itself is as old as history, the learning of that science in its application to jurisprudence is of but very recent date. Not until the time of the Emperor Charles the Fifth of Germany, was there ever a recognition publicly of the value of medical evidence. In the Caroline Code framed at Ratisbon in 1832, it was ordained that the opinion of medical men should be received in cases of death by violence or unnatural means, where there was the least suspicion of criminal agencies having been used.

"The publication of this code encouraged the members of the medical profession to more fully qualify themselves for the new duties thus recognized and imposed. The result was that many books appeared very soon upon the subject of medical jurisprudence, and the importance of medical evidence.

"At first, the surgeon was only permitted to give testimony in courts of justice. Thus, in 1606, Henry the Fourth, authorized his first physician to appoint two surgeons in every city and town, whose duty it should be to examine all wounded or murdered persons and report the facts in the case, and as late as 1667 no such report was valid unless at least one surgeon sanctioned it." In 1692, it was admitted that physicians also knew something about medical matters that might be auxilliary to jurisprudence, and by law they were permitted to give testimony in the same case with surgeons. During the eighteenth century a large number of able writers devoted their lives to medico-legal investigation in Italy, France, and Germany. The Germans have especially excelled in this department, and furnished extensive and important contributions to its stores of learning, from Henke to the great Caspar. The proverbial, patient German research is not, perhaps, better illustrated in their theology and metaphysics, than in their investigations in, and contributions to, medical jurisprudence. A list of distinguished names also adorn the history of the science in France, headed by the celebrated Ambrose Paré and culminating in the distinguished Orfila. England has not been noted for her writers on medical jurisprudence until quite recently, but during the last few decades the very able works of Doctors Guy, Taylor, Christison, Woodman and Tidy have abundantly atoned for past short-comings in this direction.

The celebrated Dr. Rush of Revolutionary fame, was among the first in this country to call attention to this important subject, which he did in an introductory lecture already referred to.

In 1823, the first edition of Beck's Medical Jurisprudence appeared. Since that time many other enlarged and extended editions have been published, until now it is complete and exhaustive, standing in the very front ranks of medico-legal works everywhere. Also within the last fifty years a large number of other learned and able writers have published works on this subject, some treating of legal medicine generally, and others treating of special departments of it, until to-day America stands as well as most European countries, so far as the literature of this subject is concerned.

Notwithstanding we have so many comprehensive medico-legal works, the authors on this subject have nearly all confined themselves to the discussion of matters relating to criminal practice, and except in cases of will or other disposition of property where the question of sanity is the issue, I find but little has been written in relation to the giving of medical testimony in civil suits, and almost nothing in that particular class of cases where claims are made for money damages for personal injuries. When, and where, the custom of calling medical men to give expert testimony in such cases originated, I am not able to say. During my early professional experience, twenty-five years ago, I occasionally heard of medical men being called as expert witnesses in civil cases, but this was of rare occurrence, possibly, however, for the reason that such cases were then very rare. Since then, owing without doubt, largely to the very great increase in railroads and other corporations, suits for damages for personal injury have steadily increased, until to-day the courts are crowded with them, and as such claimants rely, of necessity, very largely upon medical evidence to support their cause, scarcely a day passes during the sittings of the courts, without one or more medical experts appearing on the witness stand. So far as the good name and honor of the profession are concerned, these civil suits, in which so much depends upon the medical testimony, are all-important, and in my opinion the medical evidence that has been given in such cases has had more to do toward bringing the medical expert witness into the humiliating position he occupies to-day, than any other cause.

What are the causes that have brought our profession to such a pass as experts, a profession in all other respects whose integrity and honor are above question or suspicion, even by the courts themselves?

To give all the causes that have helped to bring about this result, would take us far beyond the limit of this paper, and therefore I can only mention some of those that seem to me to be the most important. One of these is the training the medical man gets in his everyday life-work. This work, unlike that of any of the other learned professions, is done in the privacy of his office, or that of the sick chamber, away from the world's scrutiny, away from the world's criticisms, and the physician is accountable only to his own conscience, as to what he may do; he forms his own opinions and sustains them in his own way, having as an audience only his willing patient who accepts without question his conclusions as wisdom and truth.

In that close communion with himself, which is a necessity of his professional life, he draws further and further away from the outside world, creates and develops ways of his own of discussing such questions as are presented to him in his daily work, thus forming habits of reasoning purely the result of the bent of his own mind.

Such a training is little calculated to sustain or help him in the most difficult and trying position in which

he can be placed, that of the witness box, where, if he would do credit to himself and honor to his profession he must not only state his opinions clearly and distinctly, but must also, as clearly maintain them. That, too, he must do under the immediate eye of the judge, standing face to face with the jury and the bar, one member of which at least, is watching every word, every expression, every answer and every opinion that he may give to find some weak place in his testimony, some vulnerable point where he can make a successful attack; and often, I am sorry to say, this interested advocate is assisted in his assault upon the medical witness, by a brother doctor who sits at his elbow. I say such a training as the physician or surgeon gets from the experiences and necessities of his professional duties are little calculated to sustain him in the contests that await him on the witness stand. Another one of the principal reasons why doctors make such bad witnesses, as the lawyers say, is I believe the neglect to study the case as well as everything relating to or having a bearing on the medical questions involved thoroughly and carefully. I am sure it is quite common for medical experts to testify in cases where thousands of dollars depend on the medical facts and their proper interpretation, without ever giving the matter any real thought or study, or without even looking up the literature of the subject involved. Time and time again have I heard medical witnesses asked what books they have read on the subject, when they could not give the name of more than a single author, and often, not that. Some years ago I heard a doctor, who was on the witness stand as an expert in a case where damages were claimed for an injury producing the so-called pendulous bowels, asked, "What keeps the bowels in place?" After some hesitation, he answered, "The walls of the abdomen." Yes, "but what else keeps them in place, so that they do not get displaced or tied up"? After great hesitation, and embarrassment, he answered, "I don't know." This man was not an ignoramus but an educated physician, a member of the Massachusetts Medical Society, but who had come into court without the remotest idea as to the real purpose for which he was there; he had come there thinking perhaps he could tell the story to the jury, just as he had told it to his patients, without being asked the why and the wherefore of his opinions other than as his patient had asked them, and that they could be answered in the same way. Had such a witness been about to perform an important surgical operation, either alone, or in the presence of one or two physicians perhaps, where he was not quite sure of his anatomy or of his diagnosis, would he have brought his patient to the operating table until he had thoroughly looked up the anatomical points involved? Most certainly not, the most reckless surgeon would not trust himself to that extent. Still, he steps on to the witness stand, where he is to give opinions that are to be the foundation of justice between man and man, where he is to stand for the honor of his profession, under the trying ordeal of a sharp cross-examination before the world, with no especial preparation for such a contest; in fact, he goes there just as he would go to see one of his patients suffering from some trivial disease. I am sure that this case is not an exceptional one, and that careful painstaking study of the question about which the medical expert is to give evidence, is rather the exception than the rule. What wonder then that the medical witness sometimes leaves the stand he has taken a few moments before with so much assurance, defeated and humiliated.

(To be continued.)

ON RUPTURE OF THE TENDON OF THE LONG HEAD OF THE BICEPS BRACHII MUSCLE.[1]

BY GEORGE H. MONKS, M.D.

CASE I. P. O'D., laborer, aged fifty-two, came to me at the Out-Patient Department of the Carney Hospital about one hour after falling to the ground, while attempting to get off a street-car. He said that he struck upon his face and left shoulder. The shoulder was painful, and as if to keep it at as perfect rest as possible, he supported the left arm with the right.

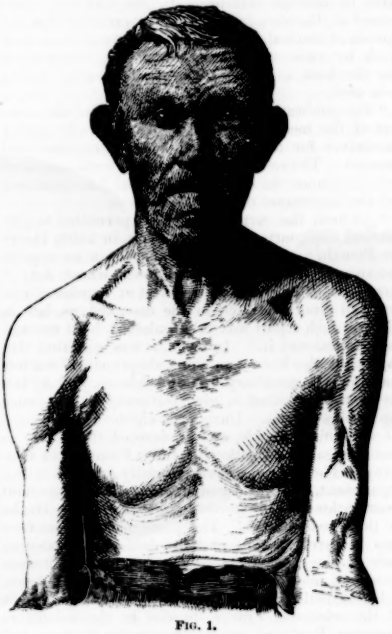


FIG. 1.

The belly of the biceps muscle was much more prominent than its fellow on the other arm, but did not impart to the touch that sense of resistance noticed in a well-contracted muscle; for it was, in fact, quite flabby. There was considerable tenderness along the bicipital groove, and active flexion of the forearm caused pain. The long tendon of the biceps could be distinctly seen, as well as felt, below the lower margin of the deltoid muscle. Figure 1 well represents the appearance of the deformity.

CASE II. T. L., a laborer, aged fifty-five, was sent to me by Dr. W. N. Bullard. The patient was shov-

[1] This is substantially the same paper as one read at a meeting of the Surgical Section of the Suffolk District Medical Society, on March 3, 1886. Since the reading, one new case has come to my notice, and is here recorded.

elling snow into a city cart, a few days before, and while doing so felt something snap in his right shoulder. Sudden and severe pain caused him to stop work at once. When seen the deformity was characteristic; and is well shown in Figure 2. There was a marked depression above the biceps on the outer side, and in this depression the tendon of the long head of the muscle could be distinctly felt.

Case III. For this case I am indebted to Dr. H. L. Burrell. J. W., aged seventy, while lifting up a cooking-stove on one side, felt something give way in his right shoulder, notwithstanding which, he kept on working for about half an hour. The pain was never at any time severe, and the only reason he sought medical assistance was because he knew "by the look of the arm that something was wrong." The deformity was exactly like that already described in connection with the first two cases.

Case IV. J. A., a German, fifty-three years of age, who had met with an accident a few weeks be-



Fig. 2.

fore, which had apparently caused both dislocation of the head of humerus and rupture of the tendon of the biceps, was referred to me by Dr. H. W. Cushing.

While the patient was at work a heavy chest fell upon him. He put up both hands to protect himself, and managed to throw off the chest to one side. In doing so, however, he felt a distinct snap in his right shoulder, accompanied by a stinging pain and inability to use the arm. The dislocation of the shoulder (subcoracoid) was reduced at the City Hospital, and it was not until this had been done that the rupture of the tendon was noticed.

The tendon of the long head of the biceps muscle has its origin at the upper part of the margin of the glenoid cavity. From this point it passes over the head of the humerus and between the greater and lesser tuberosity to the bicipital groove, down which it passes to end in muscle at about the middle of the tendon of the pectoralis major muscle. To hold this long tendon in its place, a special band of fibres continued down from the capsule of the shoulder-joint stretches across the groove. An offset from the synovial membrane of the shoulder-joint lines the upper two inches or so of the bicipital groove, and is then reflected back upon the tendon itself, as far as its point of origin at the margin of the glenoid cavity. The biceps tendon, therefore, covered by its own synovial membrane, is within the cavity of the shoulder-joint.

A rupture of this tendon appears in all cases to be due to an overstretching by a *violent contraction of its muscle*, or by *a sudden protrusion of the head of the humerus forwards*, or by *both causes* acting together.

A normal tendon whose strength is in proper proportion with the parts connected with it is very rarely ruptured. Cases are occasionally met with in the young and robust, where this accident has occurred.

A rupture occurring in those advanced in years, however, is a different matter. Here the tendon is presumably weakened by senile atrophy or shoulder-joint disease, so as to require only a slight force to completely tear it through. It is to ruptures occurring in such tendons that Volkmann has given the name of "spontaneous ruptures."

The four patients whose cases I have reported are elderly men, all over fifty years of age. Two of them declared that for several years previous to the accident they had had rheumatism in the same shoulder, where subsequently rupture took place. A third had partial anchylosis of one hip from chronic rheumatoid arthritis. Dr. C. B. Porter has told me that in a patient of his, who was advanced in years, he had found rupture of the long biceps tendon on both arms.

It is not an infrequent occurrence that one finds in the dissecting-room shoulder-joints of old persons, which have been the seat of chronic inflammation where the tendon of the biceps is worn away to a mere shred, and ready to break on the application of slight force.

Edmund Owen reports dissections of four such joints.[2]

Vogt,[3] in his treatise on surgical diseases of the upper extremities, gives an excellent wood-cut, taken from Rapp. Rupture of the tendon has occurred near its upper extremity. The lower end has fallen down the sheath while the upper one has a fibrillated extremity, suggestive of the wearing-away process which was taking place before the actual rupture occurred.

It seems to me that this weakening of the tendon, and consequent tendency to rupture must be more frequent than is usually supposed.

When we view the injury we are considering from a clinical point of view, we find that here again, we must distinguish between those ruptures resulting purely from violence and those in which the tendon has been previously weakened. There seems to be the same relative difference between the symptoms of these two different injuries as is observed between those of a fracture of the neck of the femur in the young adult and the same in the aged. When a rupture of the tendon occurs in a young and healthy individual, the injury is quite severe. A distinct snap is generally felt, followed by a stinging pain in the shoulder, and along the bicipital groove. The tenderness is marked. The patient holds on to the injured arm, and fears to move it. All motions are painful, particularly active flexion of the forearm upon the arm; *and when the*

[2] Med. Chir. Transactions, Vol. lviii, page 377.
[3] Die Chirurgischen Krankheiten der oberen Extremitäten, Stuttgart, 1881.

forearm is supinated, flexion is almost, if not quite impossible (Hueter).

The explanation of this appears to be that in flexion of the pronated forearm, the biceps has little to do, and that the flexion in such a case is accomplished principally by the action of other muscles, such as the brachialis anticus and the supinator longus, the biceps itself remaining comparatively at rest. In flexion of the supinated forearm, however, the biceps is obliged to do most of the work, and it is for this reason, therefore, that flexion of the forearm during supination causes so much pain and distress, and is often impossible. In addition to the above-named symptoms, an ecchymotic streak will sooner or later appear along the course of the bicipital groove.

What has been described as characteristic of the rupture of a strong, healthy tendon is also true of ruptures occurring in tendons previously weakened, except that the symptoms are here much less marked, and some of them may be even wanting entirely. Thus the snap of the breaking tendon is often not noticed by the patient, the pain and disability not marked, or may even be so slight as to enable the patient oftentimes to pursue his work without serious inconvenience, as is seen in Case III. The appearance of ecchymosis is rather the exception than the rule.

I have been able to apply Hueter's test in two of the cases reported here, soon after the injury. I placed a weight of two or three pounds in the hand of the affected side, and directed the patient to raise the weight to the shoulder by simply bending the elbow, with the forearm first in pronation and then in supination. Flexion in supination caused more pain, but the difference was not marked.

All cases of ruptured long tendon of the biceps, no matter what the cause be, show essentially the same deformity. The belly of the affected muscle is unnaturally full, so much so at times, as to suggest the idea of a tumor. Above the swelling is an abnormal depression, in which the tendon can be felt. The muscle, though apparently firmly contracted, is soft and flabby, and the patient is unable to make it as hard as the muscle of the other arm.

One should, in *all cases*, be able to feel the tendon running upwards from the collapsed muscle in the direction of the bicipital groove. I mean in all cases, except where that very rare injury, namely, rupture through the junction between the tendon and the muscle, has taken place. If we examine the outer head of the biceps muscle just as it issues from under cover of the deltoid, we find it is muscular, not tendinous. The tendon is entirely covered by the deltoid. If this tendon ruptures high up, the lower fragment slips down the groove, and can by felt below the margin of that muscle.

The diagnosis of a rupture of the tendon during life, when the deformity is marked, is a simple matter. Where, however, a partial rupture, or only a laceration of the sheath has occurred, the diagnosis is beset with difficulties, for the sign of most importance is entirely wanting, namely, the deformity. In such cases, reliance must be placed on localized pain and tenderness, and altered function of the muscle, following an injury which would, in favorable cases, be likely to cause a rupture. Gerster has reported a case in which he considers that a partial rupture occurred.[4]

The treatment of ruptured biceps is rest. A circular bandage around the arm, below the flaccid muscle, will raise it up slightly, and tend to relieve the ruptured tendon of all unnecessary weight. The elbow should be kept at the side, and the arm in a sling.

Pain and disability may exist for months, though this is rare, but eventually the function of the part is pretty sure to be restored. The torn end of the tendon acquires a new attachment, upon which the muscle learns to act. We lack proof that such an arm will ever again be as strong as before the accident, but we may be quite certain that it will eventually be a useful one. Such being the case, operative interference, such as laying open the joint and suturing together the two torn ends of the tendon, is contraindicated.

[4] New York Medical Journal, Vol. 27 (1878), p. 487.

RECENT PROGRESS IN PATHOLOGY AND PATHOLOGICAL ANATOMY.

BY WILLIAM F. WHITNEY, M.D.

EXPERIMENTAL OBSERVATIONS ON THROMBOSIS.

EBERTH and Schimmelbusch [1] have continued their researches, a summary of which has been published in the JOURNAL.[2] Hitherto they had worked directly upon the small vessels of the mesentery and omentum, but now their attention was turned to the large ones of the body.

The thrombi, which were seen to be formed in the former, were composed essentially of blood plates among which were mixed red and white corpuscles, while fibrin was rarely found. This same composition was in the large vessels, after ligature, punctured or incised wounds. On the other hand, fibrin appeared in the clot between the three elements. This was found especially in the thrombi which had been produced after extensive cauterization, and where a wide destruction of the inner lining of the vessel had resulted, and also in those formed after the introduction of a foreign body (thread or bits of pith). During the first few minutes, in the later case, the plates alone adhered, while in from four to six minutes the fibrin was added. Even here they appear as the first cause, but in no case was there any reason to suppose that their alteration or destruction called forth the fibrin formation. Further, the mere fact of the presence of older clumps of plates, without the smallest trace of fibrin in the same clot is a refutation of this. Therefore it must be assumed that the running together of the plates and the clotting of the blood, are two entirely distinct processes, which are not only wholly independent of each other, but are essentially different. The blood plates are one of the normal constituents of the blood, and their thrombosis is simply a sticking together, a *conglutination*. While *coagulation* depends upon fibrin, which is a solid body formed from the plasma of the blood, (a crystallization).

When the fibrin takes part in building a thrombus, it does it in a very characteristic way. The appearance of the simple thrombus of plates is modified by it in a peculiar manner. The strings and threads unite the larger and smaller plates, and mingle with the small balls; they hold the red and colorless corpuscles fast, and produce in this way a series of new pictures. But in itself the quantity of fibrin is very small compared with the amount in an extravasated

[1] Virchow's Archiv., Vol. 105, p. 456.
[2] Boston Medical and Surgical Journal, Vol. 113, p. 508.

coagulum, or with the compact mass of the so-called buffy coat.

Coagulation is a process which occurs in circulating blood only in restricted amount, while conglutination is extensive and frequent. This is practically the most important, from the simple wounding of the wall of the vessel, by which it can be produced. For the streaming by of the blood, carrying with it the corpuscular elements can give rise to the large accumulation of the blood plates, to be met with here. On the other hand, coagulation is the method by which the clot is formed in stagnating blood. If this was absolute, then the clot made out of an included quantity of blood would present only the appearances of coagulation and not of conglutination. The possibility of an extensive contact of blood plates and possibility of their running together would be excluded. But perfect rest is impossible, for even the sinking of the corpuscular elements can make weak currents by which the plates can be brought in contact and undergo the viscous metamorphosis and thus conglutination arise, but it will never reach any marked degree. For in a given quantity of blood the number of plates is small, and there is wanting the continual addition of new elements, which can only be derived from the circulating blood.

It has been recognized for a long time that thrombi which has been formed in the living body by persistent circulation appear white or pale red, while simple blood coagula are of a dark red. This corresponds in the main with what has been said above, the conglutinations being white. But this is not absolute, but is dependent in a great measure on the number of included corpuscles in both cases.

Their experiments were commenced with the idea, founded on the generally accepted theory, that injury of the walls of a vessel led to the formation of a clot within them. The most varied injuries were therefore inflicted upon veins and arteries to find out the law that governs this. It soon became evident that the expected thrombosis did not follow the lesion, and as the cases multipled they were forced to the conclusion "that injury of the vascular wall does not always lead to thrombosis."

In those cases where it was formed, examination showed that the destruction of the wall, or alteration or defect of the endothelium had no direct influence on the formation of the clot. This was best judged of when nitrate of siver had been used as an escarotic, for its coloration showed how far its action had extended. Here blackened endothelium, or uncovered muscularis, or even necrotic shreds laying free into the lumen of the vessel were found to be without clots, while it was from their wrinkles or jagged edges that the point of departure was taken.

From this they infer that it is not alone the lesion of the vessel which leads to the clot formation, but that other factors are necessary. If all the rough points and projections are immediately covered with a clot, while the smoother but not less injured places in the wall remain free, it certainly points to a mechanical factor, and this is to be sought in the relations of the circulation. Over the smooth surface the blood can flow unhindered, while it finds obstruction in the uneven places. They think, therefore, that a vascular lesion leads only to thrombosis when a disturbance of the circulation is provoked by this at the same time. This can happen in two ways. First, eddies can be formed by abnormality of the lumen, by diverticula or prominences. Secondly, the speed of the stream can be so reduced that the cohesion about the axis disappears. Just as of bodies of different weights which are shot off with equal velocities, the specifically heavier preserve their original direction longest, while the lightest sink first to the ground. So the white corpuscles leave the axial stream the quickest, the blood plates after a marked slowing of the stream, while the red corpuscles still continue to move, when the current is almost at a standstill. If by the little eddies or by a reduction of the energy of the stream the plates are diverted from the centre and driven against the wall, then it is only a question whether these plates come in contact with a normal endothelium, which protects them from viscous metamorphosis till they can be hurried back into the current, or whether this has been injured. In the latter case they cohere, and a thrombus is the result.

ON THE DEGENERATION OF MUSCLE ASSOCIATED WITH HYPERTROPHY, AND ALLIED FORMS OF DISORDER.[3]

In the first part of the treatise there is given the clinical history and pathology of a peculiar case. It was that of an adult, without the history of any hereditary influence, who suffered from extensive progressive muscular atrophy, even involving the diaphragm. It was preceded by a marked increase in the volume of certain muscles, especially of the legs. The strength of these, however, in distinction to pseudo-hypertrophy, was very great. Later they became atrophied, and at last, in some, evidence of degeneration were shown by their reaction. A bulbar paralysis was never evident at any time, nor were the muscles of the head and larynx implicated.

There were no sensitive disturbances, beyond an occasional shooting pain in the extremities. Spastic symptoms failed utterly.

The author ends the history with the following words: The picture presented above cannot be made to fit any of the existing classes. Doubtless there is a great similarity to pseudo-hypertrophy, in which an increase of the volume of some muscles with true hypertrophy of the fibres has been shown. But in this case the small muscles of the hand were affected from the beginning as well as the deltoid, while certain muscles gave the reaction of degeneration. Further, the age of the patient at the commencement of the disease was far beyond the age of childhood, when the false hypertrophy occurs. Just as little did it agree with the juvenile form described by Erb, for in that disease there is no such early implication of the palmar muscles and the reaction of degeneration. On the other hand, it did not agree with the typical picture of atrophy of the anterior cerebral lobes (Duchenne-Aran's disease) from the failure of the bulbar paralysis. He regards the case essentially as one of primary myopathia.

In the carefully made anatomical investigation there was not seen, either with the eye or with the microscope any change in the spinal cord. The peripheral nerves were perfectly normal. The muscles were found to be altered in a manner similar to that in pseudo-hypertrophy. In general there was found an accumulation of a great number of fat cells in the majority of the muscles, while in a few there was a

[3] F. Shultze, Wiesbaden, 1886. Ref. in Fortschritte dur Medicin, 1886, p. 592.

marked increase of connective tissue, as well as the remains of hypertrophic, or atrophied, usually striated, fibres. The increase of nuclei in the diseased fibres was more pronounced than has been recorded by any one for pseudo-hypertrophy. But there was also wanting that regular distribution of growing nuclei in the universally extremely atrophied muscles, such as is found in poliomyelitis and in degeneration of the peripheral parts of the motor nerves. He also signals the presence of peculiar giant cell-like formations, which have not been recorded in any of the above-mentioned diseases. These are regarded as the remnants of muscular fibres, and he had met with them once before in a muscle penetrated by fibrosarcoma. Besides this, there were present in the degenerated muscular fibres, extensive formation of vacuoles, which recalled the tube-like atrophy described by Martini. They differed essentially from that form mentioned by Letten, as the result of embolic change, for in his case the striations were oblitérated, while here they were preserved. Moreover in the longitudinal sections the vacuoles had not the form of sinuous prolongations such as have been generally depicted. Since in the initial stage of the disease many muscles were found to be increased in power, and that besides this, markedly degenerated fibres were found in apparently normal bundles, and such as failed to show an increase of connective tissue with the microscope. Therefore the author comes to the conclusion that the fibres are primarily changed, and are independent of the nervous system as well as from any possible influence of the fat and connective tissue, which develops later.

In the general part which follows is given a complete description of the anatomical conditions in the different forms of progressive muscular atrophy. They are separated into the following classes: (1) cases of pseudo-hypertrophy with the results of the autopsies; (2) conditions found in the hereditary or ordinary form of progressive muscular atrophy; (3) conditions in atrophy without pseudo-hypertrophy or heredity, and without marked nervous symptoms, but with previous true hypertrophy; (4) cases of muscular atrophy with very few symptoms on the part of the nervous system and slight degeneration in the central nervous system; (5) cases of marked disease of the anterior cornua of the spinal cord alone, accompanied by a slowly-developing muscular atrophy. His own cases he refers to the first division. He disregards the division of the atrophies according to the principle of localization, which he regards as something secondary.

In respect to the distinction between neurotic and non-neurotic atrophies he holds that the presence or absence of true hypertrophy of the muscle to be the deciding point. "The hypertrophy has been found in neurotic atrophy up to the present time, very rarely or only in the later stages of the disease. It can also be absent in pseudo-hypertrophy and allied disorders, if at the time of examination a general marasmus has ensued, but in all other cases can be detected upon microscopic examination." Also, the early occurrence of an increase of connective tissue and fat speak in favor of primary myopathia. The presence of the reaction of degeneration (in the latter stages of the disease); of fibrillary twitching (to a limited degree), and of slight pains do not speak unconditionally against this. The appearance of atrophy at an early age and heredity are on the side of primary disease of the muscles. Where the first localization is in the muscles of the face and in the lower extremity their primary affection is probable, when it is in the muscles of the hand improbable, but not absolutely excluded.

CONTRIBUTION TO THE ÆTIOLOGY OF THE FREE BODIES IN THE CAVUM VAGINALE OF THE TESTICLE.[4]

According to Luscka, free bodies are formed by degeneration of papillary growths upon the tunica vaginalis (at the anterior edge of the epidydemis) through incrustation of epithelial plugs, from blood clots or deposits of fibrin.

Virchow and Kocher regarded them as the consequence and manifestation of a kind of inflammation of the tunic, designated as periorchitis prolifera, and the former also considered them as arising from the hydatids of Morgagni. In three out of eight cases the author found peculiarities in the structure of the cavum vaginale, which seemed to be of ætiological importance. Here it was the case of their production in pre-existing pockets, resembling diverticula. If such have originated from malformation or inflammatory adhesions, the epithelial plugs, fibrin and coagula could easily be deposited there. By the rubbing of the testicle and the tunica parietalis they can undergo change of place, till they are reabsorbed, or reach a spot where there is no movement. This is the sac of the epidydemis. If abnormal recesses of this are present, they may even reach them.

When they have reached the sac or one of its diverticula, the factors are wanting for their reabsortion. Namely the disintegration from movement and their contact with new parts of the serosa. And in the course of time changes take place in them resulting in the production of cartilage-like masses, often calcified in the interior.

CONTRIBUTION TO THE PATHOLOGY OF ADDISON'S DISEASE.

Nothnagel[5] has found that the pigment in the rete Malphigi was imported from the colored cell of the corium, which stood in close relation to the bloodvessels. Demiéville[6] observed that in these pigment spots there was an increase of nuclei in the vascular walls. Both authors arrived at the conclusion, that, in all probability, the pigment came from the blood, and was not formed in the corium cells.

Riehl[7] goes a step further. In the neighborhood of the cellular infiltration of the adventitia were often seen a larger or smaller number of migrated red-blood corpuscles, proper hæmorrhagic foci. In regard to those, different parts of the skin were found to be differently related. The most markedly pigmented were not necessarily nearest to the extravasations. Diffuse hæmorrhage, extending to the boundary of the subcutaneous tissue, or into the fat or connective tissue were most often met with. The separate corpuscles appeared either normal or with the well-known retrograde aspect. There was never noticed any scaly or crumbling masses of blood pigment. On the other hand, there were more or less strongly tinged cutis cells in the hæmorrhagic foci, or in their neighborhood. The corpuscles themselves or any parts of them were never seen in such cells.

[4] Hochenegg. Med. Jahebuch. der k. k. Gesellschaft der Aerzte, 1885.
[5] Zeitschrift f. Kl. Med., 1885.
[6] Revue Med. de la Suisse Romande, 1884.
[7] Zeitschrift t. Kl. Med., 1886.

In several places the lumen of some arteries and veins was stopped by thrombi. Such vessels showed regularly a disease of their walls, and almost always hæmorrhages in the adventitia.

Thus the idea of the deriving of the coloring matter from the blood has obtained a further support. The author regards the changes in the bloodvessels as the primary cause, as the second the extravasation of the red blood coloring material, and as the third, the change of this into the pigment of the cutis and its transportation into the epidermis. From his investigations it appeared that these hæmorrhages and the taking up of their coloring matter was not continuous, but intermittent. For near spots which were equally deeply stained, there were seen only fresh hæmorrhages, while in others only old extravasations.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION.

S. J. MIXTER, M.D., SECRETARY.

March 3d. Dr. G. W. Gay presiding.

Dr. John Homans showed a specimen of

FIBRO-MYOMA OF THE UTERUS.

Dr. Homans spoke as follows: This fibro-myoma was removed ten days ago from a single woman, aged forty-six years. The presence of a tumor in the lower abdominal region had been known for two years. The hæmorrhagic flow at the catamenial periods has been growing more and more profuse. In size the tumor had increased rapidly during the past three months, until at the time of its removal it had reached a point three and a half inches above the umbilicus, at which point the abdomen measured forty-two and a half inches in circumference. In the vagina little or no neck to the uterus was felt, and the os lay high, the sound extended five and a half inches, but this was not the true uterine depth, as will be seen on an examination of the tumor. The weight of the tumor at the time of its removal was sixteen pounds, but it was very succulent and filled with fluid lymph. The tumor was dragged out through the abdominal incision by means of a large corkscrew and was held up while this wire, which I show you, and which came off today, was passed round it, and was fastened on an écraseur and tightened. The patient has done very well except for considerable abdominal distension from wind. The intestine was punctured twice with a small aspirating needle, but the greatest relief has been obtained by passing the faradic current through the abdominal walls several times a day, and giving subcutaneous injections of 1-20 grains of strychnia occasionally. Dr. James J. Putnam kindly showed me how to use the electricity and lent me a battery. This is the only case of laparotomy I have had out of some three hundred where the meteorism has been so great as to suggest obstruction, and necessitate mechanical interference. I do not show this specimen to encourage the operation of hysterectomy except in very exceptional cases, such as rapidly growing tumors, or those causing great hæmorrhage or great pain.

I have had two successful cases of hysterectomy in the last month, and I was prompted to operate on them because of a death from hæmorrhage in a case of fibroid tumor, which I saw a few weeks ago with Dr. Goodell, of Lynn. The patient was a fat married woman, about thirty-five years old, and Dr. Goodell was called to her on account of flooding. He summoned me later, and I found a large hard heavy fibroid, weighing, I should guess, about twelve pounds, and occupying the uterus pretty symmetrically. At the time I saw the patient there was no hæmorrhage, but the case seemed a very difficult one to operate upon. I had never known personally of a case of death from uterine hæmorrhage due to the presence of a fibroid, although I had seen women very exsanguine and feeble, and dragging along an existence which could hardly be called life, moreover, Keith had told me that he had never known of one, and that the authenticated cases were very rare. So I said to the patient and to Dr. Goodell, "If she had another bad flowing spell, I will remove either the ovaries and tubes or the uterus or both." I had only seen the patient once and I could not, with my previous experience and teaching, suggest an immediate operation. In three days, or at any rate within a week, Dr. Goodell wrote me that she had died of flooding. We could not get an autopsy. Influenced by this experience I suggested immediate operation in my last two cases. I am happy to say they are both doing well.

Dr. George H. Monks read a paper on

RUPTURE OF THE BICEPS TENDON,[1]

and presented two patients in whom this accident had occurred.

In reply to questions, the reader stated that the locality of the pain and tenderness is an important factor in diagnosis, that the short head probably hypertrophies, and that in no case has there been so great disability resulting from this accident as to prevent the patient earning his living.

DR. F. N. OTIS'S BLADDER EVACUATOR.

Dr. E. O. Otis exhibited, through the courtesy of Messrs. G. Tiemann & Co., Dr. F. N. Otis's simplified evacuator for the removal of débris from the bladder, after lithotrity. It consisted of a strong annealed glass bulb two inches in diameter, the reservoir; into one side of which a metal tube, forty mm. in circumference, curving down to its lowest part, is inserted. This is connected to the evacuating catheter by an india-rubber tube. Attached to the floor of the reservoir, by a bayonet joint, is a short, strong, glass bottle, the receiver. On the side of the glass bulb, opposite the tube connecting with the evacuating catheter, is another metal tube curving upward to near the top of the bulb. This is connected by another india-rubber tube with a strong rubber bulb, constituting an independent air-chamber. Two stop-cocks at the extremity of the flexible tube permit the removal of the catheter without leakage either from the reservoir or the bladder. At the base of the rubber bulb is a stop-cock to which the discharge pipe of a Davidson's syringe can be attached, by means of which additional water can be introduced into the bladder without removing the instrument, or by means of which the instrument can in the first place be filled.

The instrument is filled, preparatory to using, either by the syringe as before mentioned, or by plunging the evacuating end into a vessel of water of a tem-

[1] See page 496 of the Journal.

perature of 98°, and compressing the rubber bulb firmly once or twice.

The fluid in the receiver is removed from the influence of the current in either direction. This was shown by the tranquillity of the liquid in the receiver when water was forced through the bulb and reservoirs by the syringe attached to the bulb, and also by placing a colored solution in a bottle representing the bladder, and filling the receiver with pure water, or better, a denser fluid like glycerine, when, on pressure of the bulb, the colored solution was driven into the reservoir without materially coloring the water in the receiver. This fact is also of advantage when the urine is opaque from blood, enabling one to see, through the clear fluid in the receiver, the fall of the débris. The instrument has been proved to be very effectual, "quietly, quickly, and certainly depositing the calculous débris into the receiver, from which there is no possibility of return into the bladder."

Dr. Otis desired to express his thanks to Dr. F. N. Otis for his kindness in exhibiting the instrument to him some weeks ago.

NEW ASEPTIC SPONGES.

DR. J. W. ELLIOT exhibited some new aseptic sponges which he had made of worsted covered with muslin. He said we have all seen septic trouble from the use of unclean sponges, and we all know the difficulties of making ordinary sponges aseptic. These difficulties amount to almost an impossibility. Billroth found bacteria in sponges which had been soaked five days and more in five per cent. solution of carbolic acid. It is said that Tait never allows any one but his wife to touch his sponges.

In doing laparotomy, Dr. Elliot had always taken the entire charge of his instruments and sponges, never allowing assistants to clean or prepare them for him. He found that the preparation and care of the sponges required so much time and attention that a substitute seemed desirable. Various attempts had been made to find a substitute. Bits of linen and wads of absorbent cotton, as used by Schade, were absorbent only when dry, and even then were not very efficient. There were also objections to using dry materials, in that they collect dust and shed lint; also it is convenient to be able to wet a sponge in an antiseptic solution. After many experiments Dr. Elliot found that worsted which absorbs very slowly when dry was sufficiently absorbent when once thoroughly wet and wrung out. This sponge is cheap and clean, and has the great advantage of retaining its elasticity and absorbent power after boiling, which ruins a sponge.

The new sponges are made as follows:

Part of a skein of coarse, white Germantown worsted is doubled twice on itself and fastened in the middle so that each end makes a springy coil. The ends are then doubled together and the whole thing is covered with white muslin (the starch being washed out) making an elastic ball.

A ball of worsted thus constructed has an absorbent power about two-thirds as great as a sponge of the same size. It can be boiled and soaked in antiseptics without injury. It costs much less than a sponge. It requires less labor to make it than to prepare a sponge for an operation. It is much more certain to be aseptic. Any dirt shows readily on its white surface. When tested by wiping a mirror it leaves less lint on the surface than a sponge. Dr. Elliot had used them for six months, and was much pleased with them; wounds healed well after being wiped with them. The only objection he had found was that in laparotomy the muslin did not slide easily over the peritoneal surface, and this was only important when the sponge was passed down among the intestines through a small opening in the abdomen; under such circumstances the intestines would cling to the sponge; to obviate this he had had a few covered with silk mull. Each of the sponges could be safely used for several operations, but they are so cheap that it is better to use new ones for every important operation. He thought that they might prove useful in large hospitals where the care of the sponges is necessarily unreliable. The fact that they were somewhat less absorbent than real sponges is of less importance than one might suppose; for since the rubber tube tourniquet and pressure forceps have come into use we have less bleeding than formerly.

DR. GEO. W. GAY spoke of a case of

IMPALEMENT OF THE THIGH,

showing a large piece of board that was removed from the wound, which passed nearly through the upper part of the thigh. The patient made a good recovery.

DR. GAY also mentioned two cases of

OUTWARD DISLOCATION OF THE PATELLA,

recently under his care. The deformity was very characteristic and reduction was easy.

THE NEW YORK ACADEMY OF MEDICINE.

STATED meeting, November 4, 1886.

THE ERNEST KRACKOWIZER PRIZE.

The President, DR. A. JACOBI, as Chairman of the committee appointed by the Council in reference to the Ernest Krackowizer Prize Fund, the accumulated interest of which is available every third year as an award for an essay, the standard and merit of which are to be determined by a committee composed of the Presidents of the New York Academy of Medicine, of the Bellevue Hospital Medical College, of the Medical Department of the University of the City of New York, and of the College of Physicians and Surgeons, (unless the Academy should otherwise direct) announced that the committee had selected as the first subject, "New Observations on Osteo-Myelitis," and that all competing essays should be handed in on or before the first day of January, 1889.

DR. WILLIAM GILMAN THOMPSON read a paper on

THE MOVEMENTS OF THE HEART AND INTESTINES ILLUSTRATED BY PHOTOGRAPHY.

He said that several years ago he had been much interested in reading the account of a series of photographs of the horse taken while the animal was in motion, and that this had suggested to him the practicability of securing similar views of the movements of the heart under various conditions. Carrying this idea out he had been enabled to take photographs of normal hearts in full systole and full diastole, and also as affected by various stimuli, such as heat and different drugs.

In his early experiments he employed an ordinary camera; but more recently he had devised a form of

apparatus which rendered the work much easier, as well as more accurate. The difficulty about the ordinary camera was, that only one view could be taken at a time, and then the plate had to be changed. By the aid of his improved apparatus, however, he was able to take no less than six successive views on the same plate in the space of one second, a feat in photography which had never before been done. The problem was to revolve the plate, which was circular, and stop it six times in the second, each time exposing one-sixth of the surface; and this he had succeeded in accomplishing by means of an arrangement of cog-wheels turned by a handle. Each image was clear and distinct, without any blurring. The animal whose heart was to be photographed was anæsthetized, and an incision having been made in the median line, the heart was exposed, and a collar of celluloid slipped behind it in order to secure a light background, which was a matter of no little importance. The light used was strong sunlight, and the animals experimented on were cats, kittens, rabbits, rats, frogs, and pigeons.

The results were very interesting, and the movements, changes of form, and pulsations of the heart were distinctly shown. The shape of the apex was found to be greatly affected by different drugs, and of the various stimuli employed, heat was found to produce the strongest systole. Of the chemicals tried, glonoin, either painted over the surface or used hypodermically, was also very active in producing a similar effect; while chloral caused marked diastolic distension.

In photographing the movements of the intestines the same methods were employed. He had been able to demonstrate positively that two peristaltic waves sometimes occurred, moving simultaneously in opposite directions; although the preponderance of motion was towards the anus.

In summing up his observations, Dr. Thompson alluded to the accuracy of the photographic method which he had devised, the rapidity and ease with which data for scientific conclusions could thus be accumulated, and the facility with which the action of various cardiac and intestinal stimuli could be illustrated before classes of students.

In regard to the movements and form of the heart, he said:

I. The long diameter may or may not shorten in systole; but it usually shortens from one-fifth to one-thirteenth.

II. The transverse diameter usually shortens at least one-fourth.

III. The apex does not in all cases cause the impulse-beat; and this very frequently is produced by the hardened anterior wall of the heart pressing against the thoracic wall. The form of the apex varies greatly under the influence of different drugs.

IV. The contractile form of the right ventricle may out-last that of the left, and pathologically the two ventricles may contract independently.

V. The lumens of the ventricular cavities are capable of being entirely occluded by the circular fibres acting independently of the longitudinal and transverse; thereby demonstrating the immense reserve contractile power in all the cardiac fibres.

Dr. W. Gill Wylie read a paper on

TWO OPERATIONS FOR INTESTINAL OBSTRUCTION.

He said that out of the sixty-seven laparotomies which he had performed since June, 1885, six were not gynæcological. In only two of these, however, was the diagnosis made before the operation. In order to make the list complete, he gave a *résumé* of all the six cases.

The first was one of complete intestinal obstruction. The patient was a female, fifty years of age, who had had three children and one miscarriage. The last pregnancy was twenty years ago, and the menopause occurred four years ago. She had a uterine fibroid, and after the passage of the sound on one occasion an attack of peritonitis was set up. Afterwards she had great trouble in getting her bowels moved. Previous to the 6th of October last she suffered from colicy pains and distension of the abdomen. On that day she had much more severe pain and suffered greatly from vomiting. In order to relieve the pain large quantities of morphia were required. Ox-gall enemata and other means entirely failed in causing an evacuation of the bowels. Dr. Wylie saw the patient in consultation with Drs. F. N. Otis and Ward, and it was agreed that if a movement could not be secured laparotomy should be resorted to. The pulse and temperature were nearly normal, and the matter vomited was not stercoraceous. The patient was found to be very listless, but this could not be attributed to the opiates which she had been taking, since the pupils were not contracted.

On the 10th of October he operated. A short incision was made in the median line, and a number of small peritoneal cysts were discovered. A large uterine fibroid was found, and on one side of it was a mass of intestines closely matted together. The incision was then extended, and a large part of the intestines turned out of the abdominal cavity, when the cause of the obstruction at once became apparent. A loop of the ilium was found to be firmly bound down by a strong band of adhesions, and the obstruction thus caused was so complete that the intestines in the vicinity had turned black, and the lumen of the canal was destroyed. This firm band was cut, and the lumen was at once destroyed. The fibroid involved not only the uterus, but both broad ligaments; but as the patient had passed the menopause, it had already begun to atrophy, and it was not disturbed. The wound was closed in the usual way, and ten hours after the operation she had a copious liquid stool. The temperature never rose above 101, and the patient did perfectly well. Now at the end of three weeks her bowels were more free than they had been for ten years past.

A point of interest in connection with this case was the normal temperature and pulse, notwithstanding the presence of such a grave local condition, and Dr. Wylie said that he was convinced that many cases of laparotomy were followed by intestinal obstruction, which was generally mistaken for peritonitis. Until very lately, it had been the universal practice to keep the bowels confined for five or six days after laparotomy, notwithstanding the presence of tympanites and vomiting. He would not go so far as the laparotomist who said that a brisk purge was the best treatment for peritonitis, but he felt sure that a turpentine or ox-gall enema was often of great service after abdominal section. He had adopted the plan of always opening the bowels after the first twenty-four hours, if there was any indication for it; and in all cases, he did this at the end of three days, at all events.

The second case was one of partial intestinal obstruction. The patient was a woman twenty-five years of age, who was admitted to Bellevue Hospital in June, 1885. She was sent in as a "tumor case." There was a swelling in the left side of the abdomen, and the bowels were obstinately constipated. The uterus was firmly bound down by adhesions, but no very accurate diagnosis could be made, on account of the distension of the abdomen. On the 28th of June, abdominal section was performed, when it was found that there were extensive peritoneal adhesions, with partial intestinal obstruction. The glands were found to be greatly enlarged, and this was attributed either to syphilis or malignant disease. In the other cases which he had had, the obstruction was due simply to the pressure from a tumor, or adhesions due to the same cause.

The third case was one of laparotomy for peritonitis. The patient was a negro, who was admitted to Bellevue Hospital August 24, 1885. Two weeks before he had an attack of severe pain, and noticed that his abdomen was enlarged. After his admission the temperature was 103°, and the abdominal wall in the vicinity of the crest of the ilium was found to be indurated over a space of several inches. He made the diagnosis of suppurative peritonitis, and proposed to perform laparotomy, but Drs. Janeway and L. A. Stimson, who saw the case in consultation, did not think the operation called for. Afterwards, however, the late Dr. T. A. McBride saw the patient, and agreed with Dr. Wylie that laparotomy should be performed. Accordingly, he did the operation. A cavity was found, which contained ten ounces of pus, and the intestines were matted together. The cavity was kept washed out for several days, and the patient made a good recovery.

The other three cases were admitted to the hospital as "tumor cases." In the first he made an exploratory incision, and found tubercular meningitis present. The patient was a married woman, thirty years of age, who had had five children and one miscarriage. There was a small tumor in the left inguinal region, and he operated April 12, 1886. Two quarts of yellowish and comparatively clear fluid were evacuated, and he then found a semi-solid mass. There were many grayish-white nodules, the tubercular deposit involving both the intestines and the mesentery. Drainage was kept up as long as there was any fluid left to come away, and the operation was followed by very marked relief in the patient's sufferings. A sinus was finally established in the site of the wound, and ulceration followed. She died about the middle of July.

The fourth case was also one of tubercular peritonitis. The patient was a female, fifty-four years of age, who had had five children, and an exploratory incision was made in the same way.

The sixth and last case was that of a patient twenty-five years of age, admitted to Bellevue Hospital October 22. The abdomen was distended with fluid, and there was some jaundice. On October 23, an incision was made in the median line, and a trocar inserted into the peritoneal cavity, when three gallons of fluid were withdrawn. The nodulated condition of the liver there found showed that there was cancer of that organ.

In Germany, Dr. Wylie said, permanent drainage had recently been resorted to in cases of tubercular peritonitis, and in the two cases related in which he had tried it, the relief afforded the patients had been very great. He then went on to remark that in a large number of cases of abdominal dropsy, exploratory laparotomy was far less dangerous than tapping; and he contended that laparotomists in this country could never succeed in obtaining as good results as European operators as long as the mischievous practice of tapping continued in vogue. Patients with ovarian tumors, on account of the temporary relief afforded them by tapping, were very apt to defer applying to competent operators for their removal until a stage of exhaustion had been reached which left but a meagre chance of recovery.

Recent Literature.

An Introduction to General Pathology. By JOHN BLAND SUTTON, F.R.C.S. Philadelphia: P. Blakiston, Son & Co. 1886.

This work is developed from three lectures given at the Royal College of Surgeons, London, and is intended "to deal with the enormous collection of facts gathered together under the term pathology, by the application of the fundamental principles of the doctrine of evolution."

In the introduction, he states the three laws of evolution, as laid down by Huxley, and shows how that structural aberrations follow them, but can be grouped under two heads: 1. Correlation (including hypertrophy and atrophy). 2. Coalescence. In the remainder of the book, in which the subjects of general pathology are dealt with, his illustrations are largely taken from cases which have occurred in the lower animals, he having had exceptional opportunities for conducting autopsies on them in connection with the Zoological Gardens. The inheritance of pathological processes and their relation to evolution is everywhere insisted upon.

Of the separate parts of the book, that describing the various forms of cystomata is very full, and their relation to rudimentary structures is carefully shown. Here the value of comparative anatomy is manifested. The embryonic theory of the growth of tumors finds a warm supporter in him, and the relations of the different germinal layers are clearly indicated, and their peculiar bearings are well illustrated. The book, of course, is hardly expected to replace the larger and more comprehensive treatises for the general student, but will fill a gap in the collection of the pathologist, and is heartily to be recommended to them and to zoologists. The latter will thus be introduced to questions which should interest them, by illustrations from animals, with which he is well acquainted. The illustrations are abundant and well executed, while the dress of the book leaves nothing to be desired.

Studies in Pathological Anatomy. By FRANCIS DELAFIELD, M.D. New York: William Wood & Co. 1886.

The second part of Volume II has come to hand, and comprises the subjects of chronic phthisis and lobar pneumonia. The publication is continued in the same manner as the previous volume. We cannot help repeating what has already been said, that the work is chiefly valuable for its illustrations, and these are on such a scale as to be diagramatic in character, without being large enough to serve as wall pictures for class purposes.

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THE DISCOVERY OF THE CIRCULATION OF THE BLOOD, AND ITS CONSEQUENCES.

IT cannot be denied that the discovery of the circulation is the most important physiological discovery of modern times, and it is befitting that once a year the Royal College of Physicians of England should commemorate this event, and the name of Harvey, by an oration in which due appreciation shall be given of the services of this and other similar benefactors of the human race. Without an understanding of the circulation, the true physiology of none of the internal organs could be known, nor could correct ideas be had of inflammation, or morbid processes generally. The advantages of this discovery to surgery —transfusion of blood, ligature of arteries for aneurisms, the tying of arteries to stop deep hæmorrhages, etc.,— are too obvious to require insisting upon here.

The Harveian oration of the present year (October 18th) was delivered by Dr. F. W. Pavy, who, after referring in fitting terms to Harvey's great work and the progress of medicine by experimentation, showed the application of the principles on which Harvey wrought to the great medical problem of the present day.

It was impossible that the circulation of the blood could ever have been discovered without experimentation. The *prima facie* evidence justified the views which the ancients held, and which are represented in Galen's works. Post mortem appearances showed the veins full of blood, the arteries empty, and the right side of the heart engorged. The viscera were found turgid with venous blood, and most prominent of all was the liver, the central rendezvous of all the veins of the alimentary canal, apparently exercising the function of receiving the chyle absorbed by the venous portal radicles, and elaborating into nutrient blood the food elements. It seemed easy to trace to this organ the completion of the digestive process, and the irresistible inference was that the chyle from the alimentary canal, made into blood in the liver, went forth from that viscus by means of the veins to nourish all parts of the body. There was a flux and reflux of blood through the veins comparable to the ebb and flow of the tide.

The ancients saw no particular reason to suppose that the arteries were *bloodvessels* but rather *air* vessels; it was known that blood issued from them during life when cut, but this could be explained from some supposed mysterious connection with veins; losing their air, blood would flow in to fill the vacuum. Galen, however, taught that the arteries conveyed air *and* blood; the blood in the arteries came from the left ventricle, having leaked from the right side through pores in the septum. It is significant in this connection to note that while the ligature of arteries has been generally considered of modern invention, and ascribed to Albucasis and Jean de Vigo, we have proof that Celsus and Paul of Ægina both understood and practised the tying of arteries for hæmorrhage, Celsus lived A. D. 5, and Paul of Ægina in the 7th century. The latter gives a very clear and complete description of the ligature of arteries in the Treatise on Angiotomy.

With reference to the air-conveying function of these vessels, the ancients were early impressed with these fundamental physiological facts: 1. The necessity of air for the maintenance of life; 2. The importance of respiration whereby air is drawn into the animal system. Without air, and without breathing, death speedily ensued, hence *air and breath* came to be synonymous with life itself. What became of the air (spiritus, anima) drawn constantly into the lungs? Here a resort to hypothesis was necessary in order to answer this question. The complex composition of the air was not known, nor was the law of diffusion of gases. Yet air was known to be very penetrating, and the mechanism was apparent by which it permeated the lungs, there coming in contact with the blood sent thither to nourish these organs by the pulmonary artery. The blood in the lungs was, as it were, fanned and purified of fuliginous and excrementitious matters by the tidal respiratory air, as the relatively foul and impure air of expiration testified. Just how the air got to the heart, was not so clear. As to the ancients, not only the pulmonary artery, but the four pulmonary veins were, with reference to the heart, efferent vessels. However, somehow the "vital spirit" penetrated through aëriferous tubes to the left side of the heart whose special function it was, to send it forth by the arteries. Galen's doctrine seems to be more like the true modern doctrine, namely, that the air in the left ventricle and in the arteries was held in solution in the blood, but Galen had no true notion of the circulation as such, was ignorant of the return of the blood from the lungs to the left cavities of the heart, and knew nothing of the relations which exist between the extremities of the arterial and venous systems.

Galen's teaching led mankind about as far as observation unaided by experimentation could go, and for more than fourteen centuries was authoritative in the medical world. With the renaissance of the 16th cen-

tury came the era of scientific experimentation, which inevitably lead to more correct views as to the circulation of the blood. The way was well prepared for Harvey's final demonstration. Vesalius, the greatest anatomist of the 16th century, had corrected Galen's mistake as to foramina of communication between the right and left cavities of the heart; had given a complete description of the heart's muscle and its valves; had tied arteries and showed that the course of the blood in those vessels was away from the heart, and towards the periphery. Cesalpinus had likewise tied the large veins, and had shown that the course of the blood in the veins was the reverse of that in the arteries and towards the heart. Etienne, Eustachius, Fabricius, Fallopius, had studied the structure of the bloodvessels, recognized the systole and diastole of the heart, and described the valves of the veins. Michel Servetus had by an acute course of reasoning arrived at the true view of the pulmonary circulation, showing that the great mass of blood conveyed to the lungs by the pulmonary artery, and which, he believed was destined to a higher and more general use than simply to nourish the lungs, was returned to the left side of the heart by the pulmonary veins. Columbus, independently of Servetus, had wrought out the problem of the lesser circulation in almost the same terms, following the course of the blood from the right side of the heart to the lungs, and thence to the left auricle.

It may almost be said that, had Harvey done nothing but reason from facts already in possession of the world, he might easily have arrived at the knowledge of the circulation; but it was his part by a series of brilliant and painstaking experiments on living animals to demonstrate all that had been affirmed by his predecessors, to coördinate the facts of observation, and to give to the world a true picture of the circulation. Before Harvey, the ultimate distinction of the blood in the arteries was a profound mystery. Harvey showed that *somehow* the veins were the complement of the arteries, but how the blood "circulated" from the arteries to the veins he did not know; it was reserved for Malpighi to complete his discovery by demonstrating with his rude microscope the capillary system. Harvey's experiments demonstrated the motor mechanism of the circulation, the use of the valves both of the heart and the veins, the lesser or pulmonary circulation and the course of the circulation both in the arteries and in the veins.

THE SURGERY OF THE PANCREAS.

A DOZEN years ago, the surgeon who should seriously propose "treatment of some of the injuries and diseases of the pancreas by direct surgical measures" would have been met with a smile of incredulity as a reward for his ridiculous boldness. Ovarian cysts might be removed under favoring conditions, but this was about the limit of abdominal surgery at that time. Now, all this is changed. Nature no longer has its own way in the unrestrained nurture of neoplasms in the hollow and solid viscera; the surgeon interferes and removes the new growths with courage, if not always with success. The stomach, the intestines, the kidneys, the spleen, all submit themselves to his scalpel and carbolized ligatures and sutures, and are at once admitted to the surgical literature, embellished with new and descriptive "ectomies" and "otomies," to establish a kind of brevet distinction for them.

It might be thought that the pancreas, in deep retirement, unobtrusive, serene, would escape the attention of the surgical explorer, and would remain to the end where nature designed it to stay. But its hiding place has been invaded, and its modesty is no longer a protection and a defence. In the surgery of the future, the pancreas must literally come to the front, and take its chances with its neighbors.

We have an excellent illustration of the brilliant boldness of the antiseptic surgery of to-day in a recent monograph by Professor Senn, the indefatigably industrious surgeon of the Milwaukee Hospital; his former labors in the field of surgical pathology and practice are well known, and this contribution to the scanty literature relating to the diseases and injuries of the pancreas, and their surgical treatment is new proof of the writer's originality, and a suggestive example of the tendencies of modern surgery.

Dr. Senn approaches the human side of his subject in the orthodox, experimental fashion. He studied the pancreas under a great variety of conditions in dogs and cats, and watched the results of traumatism upon the organ. He made complete section of the gland, lacerated it, crushed it to comminution, extirpated it wholly and partially, obliterated its duct by elastic constriction, ligated it at its centre, made external and internal fistulæ, carefully observing and recording the phenomena and results associated with all this vivisecting. In a general way, his conclusions appeared to him to justify the assumption that the human pancreas has been neglected as an organ of surgical interest. "Until now, the efforts of surgeons have been limited to the treatment of a few cases of cysts of the pancreas"; . . . "the surgery of the future will undoubtedly deal with contusions and lacerations of the pancreas in connection with visceral injury of some of its adjacent organs"; will excise inflamed or gangrenous portions of the gland; will perform "duodenocholecystostomy" for permanent and incurable obstructive lesions of the bile-duct resulting from pancreatic sclerosis; will cure pancreatic abscess by excision, or anterior fistula, or lumbar drainage; will treat cysts of the organ by establishing an external fistula; will remove its splenic portion when invaded by malignant disease, but will not attempt similar measures for the duodenal end; will search for and remove pancreatic calculi; and will favor "diagnostitial laparotomy" whenever there is doubt in any of these conditions.

Concerning that important pancreatic accident, idiopathic hæmorrhage, either diffuse or cystic, the author

offers but little new information. He recognizes the medico-legal interest of a condition, which, "more frequently than is generally supposed," causes sudden death "in some as yet unaccountable way"; such hæmorrhages, in his opinion, are the result of various causes, and are the expression of different pathological conditions. In the matter of treatment, the author says that "operative interference should be limited to the class of cases described under the head of hæmorrhagic cysts of the pancreas," and should consist of a "resort to abdominal section as the only means of arresting fatal hæmorrhage, by direct ligation of the bleeding points, or by removing such localized portions of diseased tissue from which the hæmorrhage has taken place."

PASTEUR'S NEW COMMUNICATION ON RABIES.

Pasteur has made another communication to the Academy in which he sets forth the results of his preventive inoculations for rabies, and the modifications which he has recently introduced into his method.

On the 31st of October, of the present year, 2,490 persons had submitted to the preventive inoculations. Of these, 1,700 were French, and on the facts relative to these, Pasteur bases chiefly his conclusions respecting the efficacy of his method. Out of these 1,700, there were ten fatal cases, that is one per 170. This, Pasteur affirms, would be under any circumstances an extraordinarily low percentage of mortality for rabies, and may be contrasted with the relatively high death rate of the bitten, not vaccinated, estimating the value of preventive inoculations. Before Pasteur's preventive system had come in vogue, there was, he states, an average mortality in the hospitals of Paris of 12 per annum; since November, 1885, there have been but two deaths from hydrophobia in Paris hospitals, and these were persons that had not been inoculated.

Concerning the fatal cases which had been under the preventive treatment, Pasteur reasons in this way: The greater number that succumbed despite the inoculation, were children that were bitten in the face, and only the simple treatment was applied to these cases. Now experience has demonstrated that the grave wounds require a more rigorous treatment. This was illustrated by the case of the Russians that came from Smolensk. These were 19 in number, had been bitten by a mad wolf, and three of them died, the first during treatment, the second and third several days after treatment was completed. "Dr. Grancher and myself," says Pasteur, "were troubled. Were the other sixteen going to succumb to the dreadful malady? Was our method powerless against wolf rabies? Remembering then that all the dogs which I had vaccinated with success had received for their last protective inoculation, matter from a virulent spinal cord, extracted that very day, and that Meister, the first one vaccinated, had completed his treatment by being inoculated from a cord extracted the evening before, we subjected the sixteen surviving Russians to a second and third treatment, going from the least virulent cords to those of four, three and two days. It is to these repeated treatments that we are in all likelihood to ascribe the immunity from rabies of these sixteen Russians."

Taking a hint from this experience, Pasteur has of late modified his treatment in the case of grave bites (wolf bites, bites about the head and face, deep bites) and this is now his procedure: "The first day we inoculate with cords of the twelfth, tenth and eighth day at 11 o'clock, A. M., at 4 P. M., and at 9 P. M.; the second day we use the cords of the sixth, fourth and second day, at the same hours; the third day we inoculate with cords one day old. Then the treatment is repeated; the fourth day with cords of eight, six and four days; the fifth day with cords of the third and second day; the sixth day cords of one day are employed; the seventh day, cords of four days; the eighth day, cords of three days; the ninth day, cords of two days; the tenth day, cords of one day. Three treatments occupying a space of ten days are thus pursued, each treatment ending with the freshest and most virulent cords."

This modified and greatly intensified treatment has, Pasteur thinks, since the time of its adoption, August last, been attended with results as gratifying as could be desired; of ten children grievously bitten about the face and head, and who have been subjected to this new method, not one has as yet succumbed to rabies. It being rare that children bitten on the head or face escape having hydrophobia within from four to six weeks, Pasteur thinks that the present immunity of these ten children is a proof of their being permanently protected.

Pasteur concludes his communication by reporting to the Academy the results of seven new experiments on dogs:

"It may be objected to the ordinary practice of vaccinating human beings *after* being bitten, founded on the vaccination of dogs *before* being bitten, that the immunity of the animals had not been sufficiently demonstrated after their certain infection by the virus of rabies. To reply to this objection, it suffices to refer to the refractory state of dogs after trepanation and intra-cranial inoculation of the virus of ordinary rabies. Trepanation is the most certain mode of infection, and its effects are constant.

"My first experiments on this point date from August, 1885. The success was partial. During the last few months I have taken up again these experiments, and these are the conditions of success: The vaccination must begin almost immediately after the inoculation (as soon even as the next day), and must proceed rapidly, so that the entire series of protective cords must be applied within twenty-four hours, then the treatment must be gone over again — once or twice — in the same manner, the vaccination being repeated every two hours.

"The immunity conferred under such conditions is the best proof of the excellence of the method."

MEDICAL NOTES.

— Cholera is reported as having appeared at San Rosario, Buenos Ayres, South America. With the large and constant emigration which is taking place from Italy to Buenos Ayres, there have doubtless been many opportunities for the transportation of the disease.

— The fasting mania has broken out in Europe, two Italians having attracted considerable notoriety in Paris, by long fasts. One of them is said to have previously fasted thirty days in Italy. Prof. Germain Sée, who has examined him, considers him a victim of nervous derangement, as it appears that the man had twice been an inmate of an insane asylum.

— A coincidence showing a probable septic origin for pneumonia, is reported in the *Lancet*. On the 18th of October, a man and his wife were admitted into St. Thomas's Hospital, suffering from acute pneumonia of respectively three and four days' duration. Each was aged thirty-two years. The disease ran an acute course, being little influenced by treatment, and they died at the end of four days within a few hours of each other. At the post-mortem examinations which were made on the same day, acute inflammation of the right lung were found in each; this had attacked chiefly the base in the case of the man, and the apex in the woman. It would appear that they had left their house, and moved into lodgings only two or three days before the commencement of the disease, on account of the bad smells, making it probable that the disease was of septic origin.

— Students of physiognomic science assert that, in estimating human character, the ear affords a better criterion than any of the other features, for which expression serves as a mask. The unelaborate ear, presenting no well-defined elevations and depressions, is thought to indicate selfishness and want of delicacy of perception. The possessor of a thick, well-shaped, highly-tinted aural appendage, set well forward, is usually ungrateful, grasping, and lacking in depth of feeling. A thin ear indicates keen susceptibility, and an ear that projects from head alertness. A small, soft ear, with no decided lines, is symptomatic of an hysterical, emotional, and shallow nature. A long, narrow ear belongs, in most cases, to a person of delicate perceptions. A broad ear is more coarsely practical. An ear, the cartilage of which is soft, indicates weakness, mental and moral. The creative ear has numerous and clearly-defined convolutions, but the perfect ear, which is the most beautiful, lies close to the head, gracefully rounded with pretty curves, strong lines, and firm, delicately-tinted cartilage.

BOSTON.

— A letter was received by the President of the Boston Druggists' Association on Thursday evening, the 18th inst., from the Board of Police Commissioners, requesting a conference with the officers of the Druggists' Association, in regard to the recent decision of the Supreme Court relative to closing places of business on Sunday. Agreeably with this notice, officers of the Association called at the office of the Board of Police, and were advised that the recent decision of the Supreme Court on the Sunday law would render an apothecary keeping his store open on Sunday liable to prosecution. An apothecary might be in his store to put up prescriptions or sell medicine only, when called for, but must keep the store door locked, opening it only when customers call.

In accordance with the recommendation of the Druggists' Association, its members generally complied with this order on Sunday, the 21st. Notices of various character, from grave to gay, were posted in the windows, informing would-be customers as to where the line regarding sales would be drawn. Prescriptions for medicines, however, were not required in all instances to be couched in the Latin tongue, nor even to be always reduced to writing. For some such cases, the direction was simply *fiat haustum, aegro stante.*

NEW YORK.

— The wife of Dr. C. R. Agnew and Miss Grace Dodge, a daughter of the late William E. Dodge, have been appointed by Mayor Grace, Commissioners of the New York Board of Education.

— Dr. Thomas F. Cleary, who was lately made Post-mortem Examiner of the Eastern District of Brooklyn, died November 19, from blood-poisoning caused by a dissecting wound.

— On the evening of November 18th, the anniversary address before the New York Academy of Medicine was delivered by Dr. William H. Draper, his subject being "The Principles and Progress of Modern Therapeutics."

— The twelfth annual meeting of the New Jersey Sanitary Association was held in the State House, at Trenton, on November 19 and 20. The address of the President, Prof. James M. Green, of Long Branch, was on "The Physiological Side of Education."

— The indictment against the Charities Commissioners of Brooklyn for their alleged neglect to properly care for the insane at the city asylum at Flatbush has been withdrawn, as the district attorney reported that sufficient evidence could not be obtained for their prosecution. Dr. Shaw, the medical superintendent of Flatbush Asylum, has resigned, and his resignation has been accepted.

— Mr. E. Heron Allen, an Englishman who has had much fashionable success at home, and is now giving seances in New York on "Practical Cheirosophy," or the science of the hand, has in his possession a magnificent album, containing representations of the hands of a large number of prominent persons. Under that of the Rev. Henry Ward Beecher is the following autograph note: "My father used to practise palmistry, but under afflictive circumstances, which disgusted me early with this science applied."

— The New York Flower and Fruit Mission, which recently closed its work for the season, reports that between May 17 and October 21, 89,205 bouquets

were distributed to the sick in hospitals and tenement-houses. Over 1,700 jars of condensed milk, beef extract, and jelly, with large quantities of berries, oranges, grapes, fresh eggs, and other delicacies, were also taken to the sick poor in their homes. The actual expense of the total distribution was less than $30, all contributions of money having been used for the purchase of suitable nourishment for special cases of illness.

Miscellany.

AN ANODYNE FOR USE IN VESICAL IRRITATION.

Dr. W. P. Copeland, of Eufaula, Ala., writes as follows to the *Medical Record:* "In almost every community there are old men who suffer from enlarged prostates, accompanied with a chronic inflammation of the neck of the bladder, rendering them miserable sufferers and a care and anxiety to their friends and families. Having had the professional care of several of this class of cases, and dreading the tendency they so frequently acquire to the administration of opium for the relief of pain, I resorted to various washes for injecting the bladder, resulting in my adopting a solution of benzoate of soda, ten grains to one ounce of water, with twenty to thirty drops of the green tincture of gelseminum; this is warmed and injected by the patient through a soft rubber catheter, whenever the pain is severe, and the catheter withdrawn, leaving the medicine to be voided in twenty to thirty minutes; or, where he is not able to pass anything from the bladder, the catheter is reintroduced and the medicine allowed to escape. My experience with this treatment has been so satisfactory that I cannot refrain from giving it publicity to the profession."

LOSS OF WEIGHT IN EPILEPSY.

Dr. F. Hallager, assistant physician to the lunatic asylum at Viborg, has according to the *Lancet* (August 21, 1886), endeavored to find an explanation of the diminution of the weight of the body after an epileptic attack. Kowalewsky was the first to draw attention to this fact. He states "that all persons suffering from any form of epilepsy lose in weight after each attack." "This occurrence is not equally great in every case, but depends on the duration of the disease and the intensity of the attack. The loss of weight is greatest after the first attack of a series of epileptic fits." Dr. Hallager has drawn up a table indicating the weight of the body and the quantity of urine and fæces excreted by the patients each day during his researches. Solid or liquid nourishment was given to the patients in proportion to the frequency and violence of the attacks. By a chart accompanying the paper in the *Nordisk Med. Arkiv*, it appears that whenever the curve of weight is considerably depressed after an attack there is also a corresponding elevation in the urine curve, of which no explanation is afforded by an increase of diet. When a loss of several pounds takes place, it is owing to the secretion of an abnormal quantity of urine. Dr. Hallager has been unable to determine whether the production of urea is also increased by the attack, but he believes the increased formation of urea is not sufficiently great to be of importance in the loss of weight. The diminution of weight caused by an epileptic attack he considers to be due to an increased secretion of urine after the fit. M. Kowalewsky insisted that psychic epilepsy, as well as the *grand* and *petit mal*, is followed by a diminution of weight. This is contrary to Dr. Hallager's opinion, who believes that there is no diminution during this psychic state except when the patient refuses all nourishment, and that the quantity of urine secreted is much less than normal. This is no doubt due to a reaction after the preceding augmentation. The fact that psychic troubles of an epileptic origin (especially when of long duration) may, like other maladies, cause a loss of weight, is natural; but this loss, which arises from general emaciation, has nothing in common with the diminution of weight after an epileptic attack, which results from a diminution of the quantity of water in the body, due to preceding augmentation of urine.

CASES OF REUNION OF CUT-OFF FINGERS.

Apropos of the discussion lately provoked in our columns, and continued by a correspondent in the present issue regarding the possibility of reunion of severed digits, we note the following cases in the *Medical and Surgical Reporter*, the first two being quoted from the *Russkaia Meditzina*, in which Dr. S. D. Ivanoff, of Briansk, furnishes details of interesting cases occurring in healthy soldiers, one of whom had accidentally cut away, by a stroke of an ax, the second phalanx of of his right forefinger, while another had severed in the same way, the second phalanx of his left thumb. In the former, the part hewn off was still united to the hand by means of a bridge of skin about two centimetres in breadth, the ax having passed through the first interphalangeal articulation, and chipped off a part of the base of the second phalanx. In the other case, the chopped off part was brought away in a glove; the weapon cut transversely a little above the interphalangeal articulation. In both of the cases the cut was clean, without any crushing of the parts. The first man was seen two hours after the accident; the second, three hours. The wounds were washed with a corrosive sublimate or carbolic solution, and the severed parts were accurately fixed by sutures in their normal situation, after which an iodoform dressing was applied. In both, perfect union by the first intention ensued, with return of sensibility and (limited) mobility.

A still more remarkable case was described by M. Thomas, of Tours, to the Paris Society of Surgeons. One of his patients, going home late without his key, wished to climb an iron railing with sharp-pointed tops. When dropping down, he felt himself retained by his third finger, which gave way at last; and, going into his room, he found that his finger was completely stripped of its integuments. A medical man, called at once, found the finger caught on the railing by a ring. The finger appeared complete, but was without the bone. M. Thomas was called an hour after, and reintroduced the bone into the finger. He applied two sutures, and bandaged the hand. The extremity of the finger became gangrenous. How-

ever, the patient had from this attempt the benefit of preserving nearly a phalanx and a half of his finger. M. Thomas has not found any such case on record.

THE TREATMENT OF TYPHOID FEVER IN THE NEW YORK HOSPITALS.

THE New York correspondent of the *Atlanta Medical and Surgical Journal* gives an interesting *résumé* of his inquiry as to the methods of treatment for typhoid fever in vogue at the larger hospitals of that city. At the New York Hospital calomel is occasionally given early in the disease if constipation exists. This condition is afterwards relieved if necessary by enemata. Antipyrine is given in drachm doses by the rectum, and repeated every three hours if required. It is not administered with stimulants, and no cases of collapse have occurred from its use. Sponging and the bath are also resorted to. During the year the death-rate from this disease was twenty per cent. At St. Vincent's Hospital no cathartics are given in typhoid. To reduce temperature quinine is administered in doses of ten to twenty grains. Here they do not give antipyrine, or employ sponging, wet packing or baths. The mortality is forty per cent. At the Roosevelt Hospital calomel is occasionally given early in the constipated cases. Antipyrine is used and cold water applied to the surface by the different methods. Constipation during the course of the disease is relieved by an enema every third day. Ten per cent. of the cases died. At St. Francis Hospital calomel is frequently given during the early part of the fever. Antipyrine has been used in large doses, but fifteen grains is now considered enough at once. Cold sponging is also resorted to. The death-rate here was seventeen per cent. Cathartics are not given at the Presbyterian Hospital. Antipyrine is used either in fifteen grain doses every three hours, or thirty grain doses when the temperature rises above 103° F. The bath and Kibbee cot are occasionally employed. For constipation enemata are administered. The death-rate was twenty per cent. At the Mount Sinai Hospital cathartics are omitted in this fever. Antipyrine is largely used. Local application of cold water is rarely made. Here the death-rate during the year was eleven per cent. In the German Hospital from fifteen to twenty grains of calomel are always given if the patient be admitted before the end of the second week. After this a daily enema is administered if constipation is present. Antipyrine is always accompanied with stimulants, and in two patients taking half drachm doses temporary collapse occurred. Musk in seven grain doses is considered here a brilliant heart stimulant, and is used three or four times daily in severe cases. Camphor ether is also used for the same object. The mortality was twelve per cent. In all these hospitals milk is the principal food in typhoid fever, and stimulants enter largely into the treatment of nearly all cases.

Correspondence.

A SIMPLE AND READY METHOD OF INFLATING THE INTESTINE.

BOSTON, 161 Beacon Street, November 22d, 1886.

MR. EDITOR,— In April, 1886, a gentleman came from New Brunswick to consult me in regard to an abdominal tumor. As he had come from a great distance, I felt that he ought to have other opinions besides mine, and I suggested that he should come to the Massachusetts Hospital and I would ask my colleagues to examine him with me. The other visiting surgeons and Dr. E. G. Cutler and Prof. R. H. Fitz, were kind enough to examine the case. After the patient was etherized it was suggested that the relations of the colon to the tumor could be better made out, if the intestine was inflated. One gentleman suggested putting some carbonate of soda in the bowel and then injecting an acid; another, the employment of a pair of bellows. In the mean time, a long tube had been passed up the rectum and its end was hanging out of the anus. It suddenly occurred to me that I could blow this up as well or better than any bellows could, and I took the end of the tube in my mouth and with very little exertion blew up the colon so that its outline stood out clearly; with a little more exertion the whole abdomen became tympanitic and distended. I used, I should think, about a third of the air in my lungs and I was quite surprised at the ease with which the intestines were blown up. Of course the surgeon need not do the inflating; with a long enough tube the patient might blow himself up unless he was etherized.

Very truly yours,

JOHN HOMANS, M.D.

CARDED *vs.* ABSORBENT COTTON.

SALEM, Nov. 17, 1886.

MR. EDITOR,—During the last ten years, the writer has used cotton-batting as it comes from the card-room as a light, protective dressing over the eye after the extraction of cataract. Unlike absorbent cotton, it retains its elasticity and does not become sodden and hard when wet, thus acting like a poultice, as does the patented article, neither is it irritating, as wool may be. Because of these qualities it would seem to be well-adapted for vaginal tampons as well as for the ordinary surgical use.

It can be readily sterilized by subjecting it to a high temperature, but this may be deemed hardly necessary, considering that the cotton comes into contact only with machinery from the time the balls are picked until the cotton leaves the carding-machine.

As the cheapest is sometimes the best, it may be stated that cotton mills (at least it is true of the one in Salem) will furnish carded cotton, in rolls, for fifteen cents per pound, while absorbent cotton costs nearly four times as much.

Very respectfully,

D. COGGIN, M.D.

REUNION OF SEVERED DIGITS.

LYNN, Nov. 16, 1886.

MR. EDITOR, — Apropos of severed digits, I can report a measure of success and of failure. Mr. Woods, in his haste to prepare kindlings for the morning fire, brought the axe down upon his thumb, severing the end in a diagonal line extending from the base of the nail downward nearly to the joint. The fragment dropped among the chips and the man had run a distance of twenty feet when he bethought him of the valuable piece left behind, and, returning, he picked it up, wiped it, and replaced it. The piece was secured by strips of plaster over the end, and no sutures were taken, for fear that the threads would produce a little pus which might burrow between the united surfaces and prevent a first intention. The thumb is now nearly as good as before, the only sequel being a diminished sense of touch.

A young man called upon me last summer who had just had the tip of his forefinger torn off at the base of the nail by a projecting nut in a revolving lathe chuck. As he was particular about appearances, an attempt was made to save the piece as in the above case. The case progressed well until I lost sight of the patient, two weeks later, when the fragment still remained in place. It had not a thor-

oughly healthy color, and sensation had returned but slightly. Some time after I learned that the piece shrivelled and came off. This case differed from the first in presenting a rough and mangled surface for apposition in place of a clean cut.

My father, Dr. I. F. Galloupe, had a patient some years ago whose finger was severed at its base in a sole-cutting machine. After running the length of the shop, the man returned for the fragment, in all a distance of two hundred feet, and replaced it. A perfect union resulted, and the finger regained complete motion, but sensation remained impaired. Another case occurred soon after in which the fragment united, but later it shrivelled and became practically worthless.

I think an attempt should be made to save the digit whenever the wound is a clean cut, and but little time has been lost in replacing it. Respectfully,

CHARLES W. GALLOUPE, M.D.

A MEDICAL BLACK LIST.

52 W. Cedar St., BOSTON, Nov. 18 1886.

MR. EDITOR, — Would it not be wise for neighboring physicians in the city to co-operate by mutual interchange regularly of the names of patients who do not promptly pay their medical dues, as well as of the names of acknowledged dead beats however respectable, for these classes are on the increase, and only by some such co-operation can a stop be put to their hateful form of swindle, which is founded on the credit-system in a great degree.

If the profession would adopt and force a cash system in practice, no need for mutual protection, such as is above referred to would ever be felt. In a small way this has been talked of in my neighborhood lately, and favored; it is a matter needing open discussion and attention. Very truly yours,

JOHN DIXWELL, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 13, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	715	309	24.44	13.78	3.38	2.08	10.53
Philadelphia	971,363	397	124	15.00	17.50	.75	4 25	9.75
Brooklyn	690,000	—	—	—	—	—	—	—
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	171	49	12.76	21.46	1.74	2.90	6.96
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	133	42	11.84	18.50	2.22	3.70	3.70
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans	238,000	131	42	12.92	11.40	6.84	—	.76
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	90	26	14.43	18.87	7.77	1.11	4.44
Pittsburgh	190,000	91	43	32.70	5.45	1.09	1.09	13 17
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	23	10	21.75	4.35	8.70	4.35	—
Charleston	60,145	36	16	27.77	11 12	16.68	8.33	2.78
Worcester	68,383	19	7	26.30	21.04	10.52	—	10.52
Lowell	64,051	22	7	9.10	9.10	4.55	4.55	—
Cambridge	59,660	28	7	25.00	17.85	3.57	3.57	17.85
Fall River	56,863	17	5	23.52	5.88	11.76	5.88	5.88
Lynn	45,861	14	3	14.28	28.56	—	—	14.28
Lawrence	38,825	13	—	7.69	23.07	—	—	7.69
Springfield	37,577	13	2	23.07	15.38	7.69	7.69	7.69
New Bedford	33,393	12	1	25.00	16.66	8.33	8.33	8.33
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	9	—	11.11	33.33	—	11.11	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	4	1	25.00	25.00	—	—	25.00
Taunton	25,674	3	0	—	33.33	—	—	—
Haverhill	21,795	—	—	—	—	—	—	—
Gloucester	21,713	3	1	—	—	—	—	—
Brockton	20,783	—	—	—	—	—	—	—
Newton	19,759	6	2	—	16.66	—	—	—
Malden	16,407	3	0	66.66	—	—	—	66.66
Fitchburg	15,375	—	—	—	—	—	—	—
Waltham	14,609	3	1	33.33	33.33	—	33.33	—
Newburyport	13,716	2	1	—	—	—	—	—
Northampton	12,896	8	1	—	12.50	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 1,966: under five years of age 697: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 392, consumption 311, lung diseases 221, diphtheria and croup 161, diarrhœal diseases 67, typhoid fever 47, measles 52, cerebro-spinal meningitis 17, malarial fever 17, scarlet fever 11, erysipelas nine, whooping-cough eight, puerperal fever one. From measles, New York 42, Pittsburgh ten. From cerebro-spinal meningitis, New York ten, Philadelphia two, Baltimore, New Orleans, Pittsburgh, Nashville and Worcester one each. From malarial fevers, New York nine, New Orleans six, Philadelphia and Baltimore one each. From scarlet fever, New York and Philadelphia four each, Pittsburgh two, Boston one. From erysipelas, New York four, Philadelphia three, Boston and Pittsburgh one each. From whooping-cough, New York three, Philadelphia two, Baltimore, District of Columbia and Nashville one each. From small-pox, New York and Brooklyn one each. From puerperal fever, Pittsburgh one.

In the 19 cities and greater towns of Massachusetts, with a population of 965,628 (population of the State 1,941,465), the total death-rate for the week was 19.33 against 19.80 and 18.07 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,095,817, for the week ending October 30th the death-rate was 18.5. Deaths reported 3,220: infants under one year of age 891; acute diseases of the respiratory organs (London) 295, diarrhœa 130, scarlet fever 84, measles 72, fever 63, diphtheria 35, whooping-cough 17.

The death-rates ranged from 11.9 in Derby to 30.0 in Wolverhampton; Birmingham 15.4; Hull 19.1; Leeds 22.0; Leicester 17.9; Liverpool 22.4; London 17.4; Manchester 24.5; Nottingham 21.6; Portsmouth 15.3; Sheffield 16.1.

In Edinburgh 13.9; Glasgow 23.4; Dublin 21.9.

The meteorological record for the week ending November 13, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Nov. 13, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration: Hrs. & Min.	Amount in Inches.
Sunday,... 7	29.554	38.1	59.1	32.0	79.0	41.0	69.0	63.0	W.	N.W.	W.	22	28	12	O.	C.	C.	—	—
Monday,.. 8	29.911	33.0	41.5	26.9	81.0	41.0	61.0	61.0	W.	W.	W.	12	18	12	C.	F.	C.	—	—
Tuesday,.. 9	30.104	41.0	48.4	29.6	65.0	45.0	53.0	54.3	W.	W.	W.	12	12	6	C.	O.	C.	—	—
Wednes... 10	30.080	43.2	52.2	37.5	66.0	83.0	87.0	78.7	W.	N.	N.W.	6	3	4	O.	R.	O.	—	—
Thursday, 11	30.055	47.7	55.9	40.0	78.0	59.0	79.0	72.0	W.	W.	W.	6	9	8	O.	O.	C.	—	—
Friday, ...12	30.062	41.0	46.1	37.2	81.0	70.0	92.0	81.0	W.	S.E.	E.	8	6	20	F.	O.	R.	—	—
Saturday, .13	29.419	37.8	46.3	33.0	100.0	96.0	79.0	91.7	N.E.	N.	W.	30	16	20	R.	R.	O.	37.00	1.65
Mean, the Week.	29.884	40.3	49.5	33.7				71.4											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 13, 1886, TO NOVEMBER 19, 1886.

GREENLEAF, C. R., major and surgeon. Relieved from duty at Columbus Barracks, Ohio, and ordered for duty as attending surgeon at headquarters, Division of the Missouri, and examiner of recruits at Chicago, Ill. S. O. 268, A. G. O., November 17, 1886.

TILTON, HENRY R., major and surgeon. Relieved from the duties of attending surgeon at the headquarters, Division of the Pacific and Department of California. S. O. 96, Division of the Pacific, November 9, 1886.

WATERS, W. E., major and surgeon. Ordered from Fort Spokane to Vancouvre Barracks, Wash. Ter., for duty at that post. S. O. 197, Department of Colorado, November 8, 1886.

Paragraph 8, S. O. 257, A. G. O., November 4, 1886, is so amended as to direct Major V. B. Hubbard, Surgeon, to report in person to the commanding officer Columbus Barracks, Ohio, for duty. Paragraph 3, S. O. 268, A. O., November 17, 1886.

SMART, CHARLES, major and surgeon. Granted leave of absence for one month. S. O. 265, A. G. O., November 13, 1886.

CALDWELL, D. G., major and surgeon. Granted leave of absence for one month, with permission to apply for twenty days' extension. S. O. 150, Department of Platte, November 12, 1886.

MACAULEY, C. N. B., first lieutenant and assistant surgeon. Granted leave of absence for twenty days. S. O. 118, Department of Dakota, November 8, 1886.

CROSBY, W. D., first lieutenant and assistant surgeon. Ordered from Fort McDowall, A. T., to Fort Bowie, A. T. S. O. 110, Department of Arizona, October 29, 1886.

MORRIS, E. R., first lieutenant and assistant surgeon. Ordered from Fort Bayard, N. M., to Fort Thomas, A. T. S. O. 110, Department of Arizona, October 29, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING NOVEMBER 20, 1886.

NASH, FRANCIS S., passed assistant surgeon. Ordered to special duty Smithsonian Institution, November 26, 1886.

RHOADES, A. C., medical inspector. Ordered to special duty attending officers and families, New York City.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE WEEK ENDING NOVEMBER 13, 1886.

AMES, R. P. M., passed assistant surgeon. To proceed to Vineyard Haven, Mass., as inspector, November 10, 1886.

URQUHART, F. M., passed assistant surgeon. Granted leave of absence for seven days, November 8, 1886.

WASDIN, EUGENE, passed assistant surgeon. Granted leave of absence for seven days, November 11, 1886.

MAGRUDER, G. M., assistant surgeon. Relieved from duty at Norfolk, Va.; assigned to duty at Marine Hospital, Chicago, Ill., November 10, 1886.

DEATH.

Died in Pau, France, November 19, 1886, Luther Parks, M.D., M.M.S.S., aged sixty-three years.

SOCIETY NOTICES.

NORFOLK DISTRICT MEDICAL SOCIETY. — A meeting for Scientific Improvement will be held at the Hall of the Roxbury City Guard, 67 Warren Street, Roxbury, November 30, at 7.45, P.M. Communications: I. "Puerperal Eclampsia, with Cases," Isaac W. Starbird, M.D. The discussion will be opened by Sarah M. Crawford, M.D. II. "Notes on Abscess of the Liver, with Cases," Daniel D. Gilbert, M.D. The discussion will be opened by John A. Tanner, M.D. III. "A Case of Chronic Cirrhosis of the stomach, with Specimen," Wm. P. Bolles, M.D.

S. ALLEN POTTER, M.D., *Secretary.*

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION. — There will be a meeting of this Section on Wednesday evening, December 1st, at eight o'clock, at 19 Boylston Place. Dr. John Homans will show a patient upon whom he has successfully operated after the method of Mr. Adams for the relief of Dupuytren's contraction of the palmar fascia. Dr. E. H. Bradford will read a paper on "Amputation of the Hip-Joint in Hip Disease." Dr. Royal Whitman will report four cases of Excision of the Hip performed in 1882, and will exhibit one patient.

GEORGE H. MONKS, M.D., *Secretary.*

J. COLLINS WARREN, M.D., *Chairman.*

NOTE.

The Archives of Gynæcology, Obstetrics and Pædiatrics, New York, will be issued monthly, and commencing January, the parts will so appear, instead of bi-monthly as heretofore.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the New Hampshire Medical Society at the Ninety-Sixth Annual Session. Held at Concord, June 15 and 16, 1886.

First Annual Report of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania. Harrisburg, 1886.

Smithsonian Miscellaneous Collection. No. 490. Additions and Corrections to the List of Foreign Correspondents, to January, 1885.

A Manual of Diseases of the Nervous System. By W. R. Gowers, M.D., etc. Vol. I. Diseases of the Spinal Cord and Nerves. Philadelphia: P. Blakiston, Son & Co. 1885.

Diseases of Tropical Climates. Lectures Delivered at the Army Medical School. By William Campbell Maclean, M.D., C. B., etc. London and New York: Macmillan & Co. 1886.

Transactions of the American Surgical Association. Volume Fourth. Edited by J. Ewing Mears, M.D., Recorder of the Association. Philadelphia: Printed for the Association, and for sale by P. Blakiston, Son & Co. 1886.

Smithsonian Contributions to Knowledge. No. 647. Researches upon the Venoms of Poisonous Serpents. By S. Weir Mitchell, M.D., and Edward T. Reichert, M.D. Washington: Published by the Smithsonian Institution. 1886.

Eighth Annual Report of the State Board of Health of Illinois, with an Appendix embracing (*a*) Report on Disinfection and Disinfectants; (*b*) Coast Defenses against Asiatic Cholera; (*c*) Report of Proceedings, Sanitary Council of the Mississippi Valley; (*d*) Meteorological Tables; (*e*) State Sanitary Survey and House to House Inspection; (*f*) Vital Statistics of Illinois and Coroner's Inquests; (*g*) Medical Education in the United States and Canada, 1765–1886.

Lecture.

ON DIET IN ALBUMINURIA.[1]

A LECTURE ON ALIMENTARY THERAPEUTICS.

BY PROFESSOR DUJARDIN-BEAUMETZ,
Physician to Cochin Hospital, etc., Paris, France.

GENTLEMEN: In the foregoing lecture, we studied the alimentary regimen of diabetes; I shall devote the present lecture to the subject of diet in albuminuria. Nothing is more natural than to compare diabetes with albuminuria. Has it not been shown again and again, since the first experiment of the kind made by Claude Bernard, that, in injecting albumen into the blood, you determine its passage in the urine? Have not Hammond and Parkes pointed out that an exclusively albuminous diet provokes albuminuria? The carefully-conducted experiments of Semmola are equally to the point, in showing that it suffices to inject under the skin of dogs a certain quantity of albumen, to see the latter speedily make its appearance in the urine.

These last experiments present the greatest interest, and in a recent communication made to the Academy of Medicine, Semmola has indicated their high importance. In injecting under the skin of dogs, for five or six days in succession, fifteen or twenty grammes of white of egg daily, in four or five hypodermic injections, you determine in these animals an experimental Bright's disease, that is to say, albuminuria, the albuminous dyscrasia, with progressive diffusibility of the albuminoids of the blood, diminution of the ordinary amount of urea-production, dropsies, and lastly, renal lesions absolutely like those that are observed in Bright's disease.

Hence it is that many authorities, struck by the points of resemblance between diabetes and albuminuria, have not hesitated to regard the latter as the result of an augmentation of the albuminoid principles of the blood; in fact, of a hyper-albuminosis, comparable to hyper-glycæmia. Gubler, who has the most completely developed this theory, in order well to indicate the points of contact which exist between diabetes and albuminuria, has described the latter under the name of *leucomuric diabetes*, thus modifying the appellation of leucomatic diabetes, which Paulinier, in 1814, had given to this disease.

But when you investigate more deeply this physiological and clinical problem, you see how great is the difference between these two forms of diabetes, glycosuric and leucomuric diabetes. First, while we know with tolerable clearness the nature of glucose and its modifications, we are still profoundly ignorant as to the composition of the different albumens, and we are hardly able to distinguish the albumen of egg from that of blood (serum). This, however, is only one of the small aspects of the question; the capital point is that the quantity of albumen which one finds in the urine is only secondary, and it is the renal alteration which plays the most important part. One patient, for instance, may void quantities of albumen, eight to ten grammes a day, and his general health remain relatively good, while another, in whose urine you will find scarcely a trace of albumen, presents all the symptoms of a fatal uræmia.

Wherefore this difference? It is due altogether to the state of the renal filter. Without entering here into the discussions which have been carried on between the humorists and the solidists relative to the pathogeny of Bright's disease, it must be borne in mind that when we are called to treat a case of chronic albuminuria, it is at an advanced period of the affection, that is to say, when the lesions of the kidneys are more or less pronounced. The prognosis, then, depends not on the hyper-albuminosis, but on the more or less profound alterations of the kidneys, and the retention therefrom resulting, of extractive matters, and of those toxic products which Bouchard has made known to us under the name of *urotoxine*. Uræmia, the terminal period of albuminuria, depends, then, not on the quantity of albumen contained in the urine, but on the state of the renal filter.

We cannot, then, in treating albuminuria, take as our guide the mere decrease of albumen in the urine; hence our indications are necessarily somewhat vague, and based rather on empiricism than on sound physiological data. The hygienic treatment of albuminuria ought to fulfil several indications, which Semmola has summed up in the following terms:

(1) To furnish to the patient a diet which shall be readily assimilable, requiring the least possible labor for its preparation on the part of the digestive organs; (2) moderately to excite the cutaneous functions, and promote elimination thereby; (3) to facilitate the assimilation and combustion of albuminoids introduced by the food.

Before taking up the first of these indications, which will demand our principal attention, I must say a few words about the second and third. It is a matter of capital importance to promote the cutaneous functions, and Semmola, in a very interesting communication, has shown us that in true Bright's disease there are alterations of the skin characterized by an atrophy of the malpighian layer and of the sudoriferous glands, and since 1861,[2] he has pointed out the importance of the care of the skin in this disease. Hence he recommends methodical and repeated applications of dry frictions and massage, combined with hot-air baths, to favor sweating; he approves of the Scotch douche, but discards altogether the cold water treatment. He also disapproves of forced muscular exercises.

As for the third indication, which consists in favoring the combustions of albuminoid substances. Semmola recommends living in a mild, dry air, and particularly in a climate with a constant temperature; therefore, the professor of Naples advises patients living in variable climates not to quit their rooms, and to take abundance of muscular exercise in an apartment maintained at a constant temperature of from 19° to 20° C. He rightly insists on the extreme impressionability of the skin in Bright's disease, and compares it to a very sensitive hygrometer. To these means should be joined inhalations of oxygen, and baths of compressed air. I have often seen albumen disappear from the urine under the influence of this atmospheric treatment.

Let us now return to our first indication, and study the dietetics of albuminuria. As a guide in the alimentary treatment of Bright's disease, I shall follow chiefly the directions of Semmola, Senator, and Bouchardat, and I shall also avail myself of personal researches which I have made on this subject, many of which have been embodied in the thesis of my pupil,

[1] Translated from Advance Sheets.

[2] Semmola. Gazette des Hôpitaux, August 29, 1861.

Nollet.[3] The general notion which has directed the dietetic rules applicable to the albuminuric has been borrowed from the doctrine which has established the alimentary hygiene of the diabetic. Just as in accordance with what we saw in the last lecture on "Diet in Diabetes," it has become a custom to suppress from the diet of the glycosuric all alimentary substances containing starch or sugar, so, also, has it been proposed to prescribe for patients with Bright's disease a diet containing the least possible quantity of albumen, and abstinence from albumen has been regarded, in the latter case, as almost of as much importance as abstinence from sugar in the former.

But before taking up the details of this kind of dietetics, I must speak of a food whose favorable effects in Bright's disease are universally acknowledged. I refer to milk. Milk diet has been applied in the treatment of anasarca from the most remote antiquity, and we see the father of medicine recommending milk in the treatment of dropsies. This traditional practice was observed down to the beginning of this century, and even furnished Guy Pastin with his savage remark *à propos* of Mazarin, whom he detested: "We have him with us still; he is dropsical, lives on milk and will not die." But it must be remembered that it was Chrestien, of Montpelier, who, in 1831 again called the attention of the medical world to the utility of milk in the treatment of albuminuria and nephritis. Pecholier and Guignier, belonging to the same school, next showed all the advantages of the method counselled by Chrestien, while still later, Jaccoud, and his pupil Lemoine, have reported excellent results from a regimen of pure milk in all forms of nephritis. Therefore, we are justified in saying that to-day the application of milk diet to the treatment of albuminuria is accepted by all authorities, and everywhere now nephritic patients are subjected to this regimen as a matter of routine.[4]

As I have told you before, the mere fact of albumen in the urine is not of chief importance, but rather the degree in which the kidneys are affected, and you readily understand that the milk diet must be powerless to restore the malpighian bodies and tubules when they are clogged and destroyed by the renal sclerosis. In any event, it is always milk which should serve as the basis of your regimen. But as milk diet cannot be indefinitely continued, and as there are, moreover, patients to whom its usage is repugnant, it is necessary to have recourse to other kinds of food, and here it is that the rules laid down by Semmola and Senator, and which pertain both to the quantity and quality of aliments find their applicability.

As for the quantity, it has been observed that the proportion of albumen in the urine always augments after a too copious repast. You should then always insist that your albuminuric patient shall eat but little at a time, and that they shall have numerous light meals during the day. As for the quality of the food, those suffering from Bright's disease ought to make a judicious choice of alimentary substances and absolutely discard certain articles of diet, and first in the category of things prohibited we should place eggs. You know that an experimental albuminuria has been determined by an exclusive diet of whites of eggs. Stokvis has studied quite thoroughly the influence of white of egg in albuminuria, and he has shown, as previously Legart, Brown-Séquard, and Hammond had done, that two conditions are necessary in order that albumen ingested may pass out in the urine: first, that nothing but eggs shall be eaten; and second, that they shall not be cooked.[5] In fact, it takes but little cooking to prevent the filtration of albumen through the kidneys. I ought, however, to remind you of the curious experiment that Claude Bernard performed upon himself. This celebrated physiologist relates that having eaten several hard-boiled eggs after a short period of fasting, he was surprised to find his urine albuminous. Hence, while admitting as scientifically demonstrated, the facts as related by Stokvis, I nevertheless believe that it is better to be chary in the employment of eggs, even when cooked, in albuminuria.

As for meat, Senator is of opinion that it should be suppressed from the diet of the albuminuric, or at least, that usage should be made of only a little white meat; while, on the other hand, he recommends a vegetable diet under all its forms, as well as fats. I have made large use of vegetable diet in albuminuria, and must acknowledge that in a great number of cases I have derived much advantage therefrom. Amylaceous substances, vegetables, fruits, along with fats and milk, compose quite a sufficient dietary.

Among vegetables there is one which plays an important rôle in the treatment of albuminuria; I refer to the bulb of the *allium cepa* or the onion. Lerres, of Alais, in 1859[6] maintained that with the onion, which should be eaten raw, one might cure Bright's disease. But what detracts very much from the conclusions of Lerres, is that he ordered at the same time a milk diet, so that it is difficult to say how much credit was due to the onions for the good results obtained; and although Claudot and Pantiea have reported similar cases, there is reason to doubt the curative properties of the onion in this disease. At the same time, as this vegetable is relished by most patients, there is no reason why they should not be allowed to eat freely of onions in their soups or in other ways.

At the same time there are patients who cannot get along without meat, and in such cases pork has seemed the least to augment the proportion of albumen in the urine; hence I have been in the habit of recommending to my albuminuric patients to eat ham, or cold roast pork, and the fatter the better.

Senator counsels fish; I am inclined to think, however, the fish is not a good food in Bright's disease, and that it notably increases the amount of albumen.

The same prescription should be made of cheese, which is a highly azotized nutriment.

As for drinks, it is still milk which you should order to be taken most abundantly, and which you shall insist upon unless its usage is absolutely repugnant to the patients. When milk cannot be taken, you can make use of wine, and especially port, which contains considerable tannin, dilating it with Vals or Vichy

[3] See and compare: Semmola's works, 1800 to 1885; Senator, "On the Hygienic Treatment of Albuminuria" (Berlin, Klin. Woch., December 4, 1882). Bouchardat, "On the Hygienic Treatment of Albuminuria" (Annuaire de Therap., 1886). Nollet, "A Study on the Alimentary Regimen of the Albuminurie" (Thèse de Paris, 1885).

[4] Chrestien, Arch. Gén. de Méd., t. xxvii, 1831. Pecholier, Montpellier Medical, t. xvi, 1866. Jaccoud, Clinique de l'Hôpital Laribosière, Paris, 1873, p. 792. Lemoyne, On Milk Diet in the Treatment of Dropsies (Thèse de Paris, 1875). Debove, On Milk Diet in Disease (Thèse d. Agrègation, 1878).

[5] Stokvis. On the Usage of White of Egg in Albuminuria. (Centralb. f. Klin. Med., 1866).

[6] Bull. Gen. de Th., t. xlv, p. 39.

water; pure wine should be forbidden, as well as brandy and other spirituous liquors. Beer must also be interdicted, as all observers are agreed that the use of beer augments the figure of albumen, and congests the kidneys.

As I am on the subject of drinks, let me call your attention to a potion which Semmola has called "Anti-Brightic," and whose composition is as follows:

Iodide of Sodium	1 gramme.
Phosphate of Sodium	2 grammes.
Chloride of Sodium	6 grammes.
Aqua Fontanæ	1 litre.

The Neapolitan professor recommends that this potion should be drunk every day, pure, or mixed with milk, and claims good effects from it.

Such are the dietetic rules applicable to albuminuria. These rules, it must be borne in mind, are directed by empiricism and are far from having as high value as those which preside over the alimentation of the diabetic. I have given you the reasons before, namely, that the augmentation or diminution of albumen in the urine plays but a secondary role in Bright's disease.

But as the symptoms of uræmic poisoning, whether produced by urea or urotoxine, are augmented by an azotized diet, it seems to me reasonable and physiological for persons affected with this disease to diminish, as far as possible, the usage of azotized substances and to employ instead a vegetable diet and milk.

What result may you obtain from these dietetic rules rigorously carried out? They are very variable, and depend entirely on the greater or less extent of the renal lesions, and also on the nature of the lesions. I have seen in children severe cases of Bright's disease get well, and the most curious instance of the kind was that of a little boy, twelve years old, whom I saw at Compiegne, with Dr. Chevalier; this patient was voiding nearly an ounce (25 grammes) per quart of albumen in his urine. At the time of my visit there were marked symptoms of uræmia present, but at the end of three months, by following a severe dietetic regimen, of which milk, vapor baths, and massage were the principal factors, this young patient completely recovered.

Unfortunately, you are generally called at an advanced stage of the disease, when little can be done, and your duty will consist in an endeavor to keep the patient alive as long as possible, and to prevent uræmic complications. You will be able, in a measure, to attain this end by remembering that the intestine has a vicarious office with regard to the renal and cutaneous functions, and that you may to a certain extent by repeated purgatives relieve the kidneys of a part of their burden, and give issue to toxic materials which accumulate in the blood, thus preventing uræmic poisoning.

— The *Polyclinic* speaks editorially of medical extravagance in the number of societies for medical improvement which exist, and which are a burden to the physician's pocket and time without an equivalent return to him. In Philadelphia a man cannot well avoid belonging to three societies which cost him $25. A heavy assessment from the county society goes yearly to printing the State society's proceedings which are made up with so little censorship that men generally do not take the trouble to call for copies.

Original Articles.

MEDICAL EXPERT TESTIMONY, AS GIVEN IN THE COURTS AT PRESENT.[1]

BY A. F. HOLT, M.D.,
Medical Examiner, Middlesex County, Mass.

Another cause which has contributed largely towards bringing about the condition of things we are discussing is the bias of mind with which the expert goes on to the witness-stand, a bias toward the side which has called him. This shows itself the most forcibly where the expert has been the medical attendant in the case, and it is almost the invariable rule in these civil suits where claim is made for damages for injuries to summon such a one, nŏt only to testify to matters of fact that have come to his knowledge by reason of this relation to the claimant or otherwise, but also to examine him as an expert. The human mind is such that I do not believe it is possible for any one, no matter how upright and honorable he may be, to clear himself from this influence so as to become an impartial witness.

The relations of physician and patient are among the very closest and confidential of any in life; the former is the friend the adviser of the latter, and he listens to the story of his injuries and feelings without a thought that it may contain exaggerations or mis-statements, and accepts it as unquestioned truth from which he is to draw his conclusions as to the extent of the injury. While, on the other hand, the patient who has called him expects, as a matter of course, that he will not only take the same view of the case so far as its seriousness is concerned, as he himself does, but, that he will, when he comes to court, present it in the best light for his patient's benefit, that he will keep back what may be damaging to the latter, that the weight of his character, professional reputation, position, influence, in fact everything will all go to favor the interests of his patient, for whose cause he stands there as the champion for whom he is to win the highest possible verdict. The medical man, called into the case simply for the purpose of testifying, has something of this same bias to influence him: and so has the expert called for the defence. It is to witnesses testifying under such a pressure, such a bias, that courts and juries have to look for the solution of questions involving medical science, questions that are, as a rule, the very foundation of nearly all of these suits for damages for personal injuries. Is it a wonder, I say again, that such testimony sometimes falls short of what is expected of it?

This influence which we are considering has another effect on the testimony of experts, and one that must have become manifest to any one who has paid any attention to this subject, and that is this, it leads them, to construct theories favoring their side of the case that do not have the proper data for a basis. Often I have known medical witnesses to draw the most positive conclusions from the existence of a single sign or symptom of injury or the result of injury. Perhaps a single example of this kind of reasoning may make this point clear. A few years ago I was interested on the side of a defence in a case where suit had been brought to recover damages for injuries received from being thrown from a team. The plaintiff, a young man, recovered consciousness soon after the injury,

[1] Concluded from page 496.

and was then sent to a hospital, the record of the case there, being as follows: "Two small cuts on the head, one of them requiring stitching, and a severe sprain of the ankle." He remained there a few days when a plaster-splint was applied and he was allowed to go to his home. The injury to the head was looked upon as a slight one. On account of the injury to the ankle, he was seen once or twice as an out-patient by the hospital authorities, after which he went into the hands of his own physician. This young man, when he came to the witness-stand, after describing the condition of his ankle, which he claimed was still quite lame, testified "that after he had been in the hospital three or four days, he discovered a discharging of bloody matter from one of his ears; that he had never had any trouble with his ear before the injury, and that it was still discharging."

The medical expert, his physician, testified "that this plaintiff had never complained or called his attention to his ear until the night before the trial; that he then examined it, and found the drum extensively ulcerated, disease of the internal ear, and a foul discharge." He gave, as his opinion, "that this young man, at the time of the accident, and as the result of it, sustained a rupture of the drum, and that this occurred by *contre coup*, the cuts being on the opposite side of the head; and further, that he also probably received a fracture of the base of the skull, and that one of these injuries was the cause of the discharge from the ear."

Another expert testified unqualifiedly, "that this man sustained a fracture of the base of the skull as the result of the injury, and that the discharge from the ear came from the inside of the skull." That is, these opinions were founded on one single symptom, and that one described to the experts by the plaintiff, and, of course, an interested party; and furthermore, a symptom by no means a constant one in the case of fracture of the base of the skull, and one, when considered by itself, in no way diagnostic. An expert summoned by the other side testified "that he had made careful examination of this disease of the ear, as well as of the pharynx and nostrils, and that he found pronounced evidences of an old chronic catarrhal inflammation of these parts; and he gave, as his opinion, that the loss of the ear-drum, and the disease of the internal ear was the result of this disease." I might add, by the way, that notwithstanding this man had sworn he never had had any disease, or treatment of the ear prior to the injury, a searching of the records of the Eye and Ear Infirmary soon after the trial revealed the fact that a person of the same name and residence had been so treated in that institution more than two years before. This physician, the medical attendant, said to the expert for the defence, after hearing his testimony: "Why, Doctor, you have damaged our case more than a thousand dollars." Yet this physician stands among the most high-toned and honorable men in our profession, his integrity is above suspicion, and his capacity and training in medicine eminently qualify him to testify as an expert in anything pertaining to his profession. You will ask, I presume, how can one reconcile learning and capacity with such testimony and such conclusions. I answer, simply in this way: this physician had never thought of or even conceived of the high purpose for which he was called into court. It had never occurred to him that he was called there by justice herself to assist in the proper and just decision of the cause in which he was engaged. He had rather looked upon himself as the friend of his patient, who had called him as a witness, and that to him alone he owed allegiance.

So this influence of bias of mind asserts itself in other directions; it leads the medical witness to give undue prominence to minor symptoms, when, by so doing, it will strengthen his side and his theory of the case. It also prompts him to refer all other symptoms, however vague or indefinite, to the original injury. The reasoning and study of the case under this pressure of bias is from an entirely different standpoint from what it would be if one was examining a patient for the purpose of determining the relations of cause and effect and treatment, for, in this case, there is no preconceived theory to support, and every fact weighs for what it is worth in making up an opinion. On the other hand, the expert, under this influence, twists and distorts the facts to suit his theory, although, as a rule, he does this honestly and sincerely, with no thought of wrong-doing. So, in these suits for money damages for personal injuries, whatever may have happened to the claimant between the time of the accident and the trial in the way of sickness, he is sure to claim it as one of the results of the injury, and he usually finds medical testimony to support this theory. In a case that came under my observation some time ago, the party bringing the suit had received a sprain of one of the large joints. Some months after he had an attack of inflammatory rheumatism, and his medical attendant testified "that, in his opinion, the rheumatism was the result of the injury, and that injuries such as this man received (a sprain) was one of the common causes of this disease."

One of my earliest experiences in court was in connection with a case where a woman claimed, as the result of an injury, spinal irritation. Some time after she showed signs of lung disease, and at the time of the trial, these had developed into a well-marked case of what was then called chronic catarrhal pneumonia. As usual, the claim was made that this disease was the result of the spinal irritation. After a long search of works on diseases of the nervous system, I found one or two authors who enumerated, among many other diseases that might result from spinal irritation, disease of the lungs; and on this doubtful authority, three physicians, myself among the number, testified that lung disease might result from spinal irritation.

Had we spent the time consumed in looking up authorities to support conclusions drawn in the interest of the plaintiff in studying the objects of medical expert testimony, I am sure none of us would have been found in the witness-box bolstering up such a theory.

The appearance of the expert witness, as he presents himself on the stand, has much to do with the amount of influence he may exert on the judge or jury. This appearance is, of course, made up very largely of the personalities of the witness, and these are not proper matters of criticism or discussion. But there are certain other faults that are not uncommon to the medical expert that not only detract from his good appearance, but also seriously lessen the weight of his testimony. One of the most common of these faults is lack of attention to the interrogatories put to him. It is not uncommon to hear a medical witness ask the questioner, and particularly one that is a little embarrassed, to repeat the inquiry, and sometimes this

request is even repeated in connection with the simplest question. This fault does not come from lack of comprehension, but rather from inattention. The witness hears the first part of the inquiry, then his mind begins to formulate the answer, and when he is ready to reply, he has really forgotten what he is to answer. So, sometimes, one answers without a clear understanding as to what the inquiry is, and such a course is almost sure to get him into trouble. Also, in cross-examination, a question is put in such a way that the correct answer is apparent to everybody, and still that answer does not convey the honest opinion of the expert in relation to the subject under inquiry. Some witnesses evade such a question, either by discussion with the attorney, or by making an indefinite evasive reply, but the questioner is sure to press the matter, and the expert must, as a rule, in the end answer it as the attorney intended he should, and he usually winds up such a contest by asking the witness "why could you not answer that in the first place?" A better way to treat such questions is to answer at once, and then to ask for an opportunity for an explanation; this is always granted, and under this broad authority anything in relation to the matter can be set right. If one pursues the former course, he often, although very unjustly, gets the reputation of being an unfair and one-sided witness.

These causes that have been discussed in the last few pages, seem to me to be among the most prominent of those that have contributed largely toward lowering the position of the medical expert witness, and these can fairly be laid at the door of the medical profession, but this profession is not responsible for all the sins that are heaped upon the head of the medical expert, for the legal profession has its share of responsibility for bringing this witness into such disrepute, and that share is a very large one. The attorney who brings one of these suits for damages for personal injury, is sure to try and procure the kind of medical testimony that will put the damage done to the body of his client in the strongest possible way. He not only drills his medical witness in the art of testifying, but by skilled argument he tries to impress him with his own ideas as to the extent or nature of the injury, and whether he succeeds in this or not, when he gets into court, he knows just how far to go in his questioning, being sure to bring to light only such facts as will help his side of the case. So the cross-examiner of one side or the other puts his inquiries with the sole object in view of getting responses that will strengthen his side. The attorney for the plaintiff formulates his hypothetical questions with all the skill and ingenuity of which he is master, not for the purpose of getting facts that will lead to correct and just conclusions, but with the idea of getting testimony that will lead to the largest money verdict. What wonder, I say once more, is it, that he often leads the medical witness to appear as a partizan, rather than as instructor of the court?

Now we come to the most difficult part of this question, and that is, what is the remedy? How can we remove this dark blot from the otherwise fair fame of the medical profession? The short-comings that I have mentioned that the medical witness reveals on the witness-stand, can only be overcome by individual effort, assisted by the medical fraternity as a body. But the great fault, the foundation of the whole matter, lies deeper; in fact, it is in the custom itself, as it stands to-day. How can this be improved? Some have suggested that medical expert witnesses be summoned by the justices of the court. This plan would no doubt greatly improve medical testimony; it would certainly do away with the bias men have, who are called as they are to-day. The justices of the courts of Massachusetts have ever been men of honor and integrity, still they are not free from the influences that make men entertain visionary and unsustained views in relation to many matters of science. Only last winter I heard one who had held the position of a judge in one of our courts for more than a quarter of a century, testify before a committee of the legislature in opposition to a bill regulating the practice of medicine, "That he knew of a case where a boy was seriously shot in the abdomen, the charge entering the peritoneal cavity and producing serious bleeding; the boy's mother placed her hands upon the wound, and by reason of some peculiar power she possessed, the bleeding ceased and the wound healed;" he further testified, "That the boy would have died at once, had it not been for this treatment." A justice holding such notions of medical practice and surgery, would not, I fear, be very judicious in making his selection of medical experts.

The principal objection to this suggestion, is to my mind, however, that it is impracticable, for this reason: there is no probability that the necessary legislative action to bring about this change, could be procured, as a move in this direction would arouse the opposition of a large majority of the rank and file of the legal profession, they knowing that the basis of these claims for damages for personal injuries and their support before the courts, depends very largely upon the medical testimony, and just such testimony as they are able to get under the present system, and furthermore, I am sure the people would look upon such legislation as an effort to take away one of their rights.

It has also been proposed that the courts be empowered to call experts, and still allow the parties to the suit to put in such medical evidence as they may desire. I do not see how such a plan would improve the matter. It is often the case now that clear and well-founded medical opinions are given in the courts, opinions as able and trustworthy as could be procured from any expert, no matter by whom summoned, but the difficulty is in these cases where such opinions have been given, the other side calls a medical man who arrives at a different conclusion, and supports his opinion by what seems to be, to the unprofessional mind, as plausible argument as that of the expert of the other side. Who are the jury to believe? The expert summoned by the court? or the one called by the parties themselves. The advocate on the one side argues that the witness that gave testimony favoring his view of the case, ought to be believed, and so does the advocate on the other side. The presiding justice can lay down the principles of law, but he cannot prescribe who is to be believed, and not believed, for that is a province of the jury, and a question they must always settle, therefore, it seems to me clear, that the carrying out of such a suggestion, would leave this matter of expert testimony just where it now stands.

There are no doubt other plans requiring legislative action, that would correct this matter and put the medical expert in his proper place before the courts, and give to medical testimony the respect and weight to which it is entitled, but the present custom is so thoroughly bound up in our judicial system, I do not

believe that any such could be devised that would not arouse sufficient opposition to ensure its defeat. I am satisfied that whatever is done in the near future, at least looking to the removal of this dark stain from this great and otherwise honored profession, must be done in our own ranks by both combined and individual effort.

The last quarter of a century, so far as the development of medicine is concerned, has been the grandest in all its two thousand years of history, and in that short time it has advanced a long way over the road that leads from the darkness, the groping and uncertainty of the practice of an art toward the broad, bright daylight of exact science, until the teachings of to-day are founded on the results of observation and experiment, rather than on those of speculation and theory as formerly. In this grand march, surgery, chemistry, physiology, pathology and sanitary science, have all taken part, and now Theory and Practice is beginning to feel this influence that has pushed the other branches of medical science so well forward, and *it* is moving in the same direction. Certainly there never was a more opportune time than the present for the medical profession to develop medical jurisprudence, and that by a more careful study of its duties and responsibilities and by a just appreciation of its high importance in both civil and criminal causes. By so doing we shall not only bring credit to ourselves, but add another benefit to the long list the world already owes to medical science.

NOTES ON THE TREATMENT OF STONE IN THE BLADDER.[1]

REPORT OF TWENTY-FOUR CASES. RECURRENCE OF STONE. LITHOLAPAXY IN THE FEMALE BLADDER. FISTULA AFTER LATERAL LITHOTOMY. CALCULUS WITH SHOE-STRING NUCLEUS. STRICTURE OF THE URETHRA COMPLICATING LITHOLAPAXY.

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IN no branch of surgery has there recently been so complete a change of practice as has come about in the treatment of stone in the bladder. Within the past eight years, two operations have come to the front and have rapidly superseded the older methods. Of these, one, litholapaxy, is new, and the other, supra-pubic lithotomy, although old, was not formerly in good repute. A brief review of the steps in this radical change may be of interest, and will serve as an introduction to a short series of cases treated in accordance with modern ideas.

Ten years ago, it was the generally received practice among those who might be regarded as authorities in this branch of surgery, to crush only those stones which could be satisfactorily disposed of in three or four sittings by the lithotrites then in use. So great was the fear of instrumentation in the bladder, that it was thought important for these sittings to be very short (from three to four minutes). Evidently, therefore, the stones considered proper for lithotrity were small or soft. Larger and harder stones were submitted to lithotomy, and the lateral operation was the favorite one for these cases. The central perineal operations had some strong advocates, but were only useful for stones of moderate size.

[1] Read before the Boston Society for Medical Improvement, November 23, 1886.

Supra-pubic lithotomy was generally looked upon as a dangerous method, only to be resorted to with stones of large size which could not be safely dragged through the perineum.

At about the time of which we are speaking, the antiseptic method of treating wounds came to a general adoption and the consequent improvement in the results after lithotomy was so considerable as to threaten to place still closer limits to the field of lithotrity.

In the year 1878, Dr. H. J. Bigelow published his first paper introducing the operation of Litholapaxy, which was rapidly adopted, and is to-day the generally accepted method of dealing with the great majority of cases. With the efficient lithotrites and evacuator which made "lithotrity at one sitting" possible, it is now usual to remove stones of considerable size and hardness, and practically it has been found that under ordinary conditions in adults, any stone which is suitable for lateral or other perineal lithotomy is suitable for litholapaxy, and that even stones so large that they would require a supra-pubic incision if they were removed by the knife, may, when soft and friable be safely crushed and pumped out.

The exceptional cases in which litholapaxy cannot be used are as follows: (1) A very large and hard stone may resist every attempt at crushing. (2) A stone may have as a nucleus a foreign body, such as a piece of necrosed bone or a bullet, too hard to crush and too large to come through a tube. (3) An encysted stone may be out of reach of the lithotrite. (4) Some writers consider that stricture of the urethra may prohibit litholapaxy. This cannot often happen, for strictures, however close, yield readily to divulsion which may be immediately followed by the crushing and evacuation of the stone. I have so often seen these two operations successfully done together on an etherized patient, that I can but think this the best practice. While it economizes time, it saves the patient much needless manipulation. (5) False passages may exist, which so interfere with the introduction of instruments that the dangers of the operation are greatly enhanced, and the question of lithotomy is to be entertained. (6) The hip may be anchylosed, in a position which interferes with the use of urethral instruments.

It at first seemed unlikely that "lithotrity at one sitting" would ever be applicable to children. Before puberty the urethra is so small that instruments of any considerable size cannot be used through it. Quite recently, however, Dr. Keegan,[2] of India, has published a series of fifty-eight cases of stone in children, in which he used litholapaxy, and with only one death. Such results must command our attention and make us reconsider the matter, although it is hard to believe that the present very low death-rate after lithotomy in children can be improved upon.

In any of these exceptional cases to which litholapaxy cannot be applied and in which a cutting operation is required, we have, as has been said, three general methods to choose from. The median perineal, the lateral perineal, and the supra-pubic operations.

Median perineal lithotomy, in which the membranous urethra is opened, and the prostate then either dilated or incised on the middle line is only applicable to small stones, and finds but little use at the present time. In case of a foreign body of small size, it might be employed.

Lateral lithotomy has a much wider field, being

[2] Indian Medical Gazette, May, 1884.

competent for the removal of stones of considerable size. It has the disadvantage of necessarily wounding the urethra and prostate, at the same time putting the seminal ducts and rectum in danger. It also exposes the patient to certain risks from hæmorrhage.

On the other hand, owing to the dependent position of the wound, it has the decided advantage of providing thorough drainage to the bladder.

In the treatment of stone in children lateral lithotomy has had its greatest success, the death-rate being very low (from five to seven per cent). Dr. Freyer has even achieved the feat of completing one hundred and forty-three operations without a death.

Lastly, we come to the supra-pubic operation, with the recent great improvement in its technique.

In the year 1878, which was an eventful one in the history of stone operations, a few months after the publication of Professor Bigelow's monograph, there appeared in the *Edinburgh Medical Journal*, an article by Dr. Garson, upon the influence which distension of the rectum had upon the position of the bladder and the pre-vesical fold of peritoneum. This paper attracted but little attention at the time, but was followed two years later by another upon the same subject by Petersen, in the *Verhandlungen der Deutschen Gesellschaft für Chirurgie*, 1880.

These observers showed that by filling the bladder with water and then distending a colpeurynter introduced into the rectum, it was possible to lift the parts so as to very materially raise the peritoneum and thus widen the space between it and the pubes through which the bladder could be reached. The distension of the rectum pressed the bladder forward and held it firmly against the abdominal wall, so that it could be easily recognized and readily opened. It also, by raising the vesical floor brought all parts into easy reach of the finger and eye, making thorough exploration possible.

By the previous methods of operating, the two principal dangers were: *first*, of wounding the peritoneum; and *secondly*, of infiltration of urine with septic processes starting in the wound. The first of these dangers was one which could be avoided with care, but, this very care in separating the parts, and bringing the bladder into view, opened the cellular spaces about and greatly increased the danger of septic absorption. The new method not only rendered the danger to the peritoneum more trifling than it had been before, but also by bringing the bladder into easy reach rendered much manipulation unnecessary and made it possible to open it by a clean, direct incision without interference with its cellular surroundings.

The German surgeons quickly put this improvement into practical use, and the operation became at once a popular one with them; It was almost simultaneously adopted in France and soon found its way to England and to this country. So firm a hold did it take upon the German mind, saturated with an enthusiasm for antiseptic surgery that at Magdeburg in 1884, Volkmann of Halle, who was one of Lister's earliest and most strenuous advocates, declared it as his belief that lithotomy was the proper operation for stone, and that "the various methods of crushing only deserved a place in the history of medicine." He was supported in this view by Bergmann: their opposition to litholapaxy being based on the supposition that it could be successfully practised only by especially skilful and experienced surgeons.

This theoretical position was ably opposed by Professor Dittel and others of large experience in genito-urinary surgery, who held the same high opinion of litholapaxy that prevails in France, in England, and in this country. The best answer to so speculative an opinion as that of Professor Volkmann, is, however, an appeal to facts; and the lithotomist who hopes to establish his pet operation in advance of all others for the treatment of stone, must show that it is capable of saving more than ninety-seven per cent. of ordinary adult cases, for this is about the percentage of recovery after litholapaxy.

From this brief sketch it will be seen of how recent a date are the two operative procedures for the treatment of stone in the adult, that now meet with the most favor, and which have within six years to a great extent displaced the perineal operations, that up to that time had been in highest repute. The modern treatment of stone in the bladder may then be briefly summarized as follows:

Litholapaxy is to be used in all ordinary adult cases. How far this operation can be applied to children is still doubtful.

Supra-pubic lithotomy is to be employed in cases where the stone is too large and hard to be crushed, or when an impervious stricture makes the introduction of a lithotrite or staff impossible. In case of an encysted stone the high operation is also the best, as the thorough inspection of the bladder which it makes possible, enables us to treat the condition intelligently.

Perineal lithotomy may be reserved for occasional use upon stones of moderate size where false passages or anchylosis of the hip make litholapaxy impossible or when a stone has a foreign body as a nucleus. It is possible that the supra-pubic incision may eventually prove to be the best for even these cases; but at present the percentage of recovery after lateral lithotomy, in cases of small calculi, is better than the high operation can, or at any rate has, produced.

The treatment of stone in children is just now more unsettled than in any other class of cases. Litholapaxy and supra-pubic lithotomy are both putting in their claims, but thus far the best authentic results are from lateral lithotomy. Dr. Keegan's results from crushing are, it is true, better than the average results from the lateral operation; but until they are confirmed by other operators, they must be looked upon as exceptional and are far excelled by Dr. Freyer's success with lithotomy (one hundred and forty-three cases without a death). Whether supra-pubic lithotomy can accomplish something better still, has not been shown.

REPORT OF TWENTY-FOUR CASES.

The cases to which reference will be made in this paper are twenty-two in number, and comprise all of those operated upon by the writer up to this time. Twenty of these operations were by litholapaxy, one by lateral lithotomy and one by supra-pubic lithotomy.

The following table gives the essential facts in regard to them.

It will be seen that in but one case did death follow the operation, and I will give that patient's history somewhat at length.

M. M., a laboring man, sixty-nine years of age, entered the Massachusetts General Hospital January 20th, 1885. He gave a history of frequent, painful

	Age	Sex	Residence.	Duration of Symptoms.	Operation.	Date.	Stone.	Weight Grains.	Result.	Remarks.
1*	65	M	Boston	4 or 5 months	Litholapaxy	Nov. 17, 1883	Phosphatic	270	Recov.	Multiple calculi
2*	66	M	Boston	3 or 4 months	"	July 24, 1884	"	127	"	"
3	10	M	Cambridge	Since Babyhood	Lateral Lithotomy	Nov. 11, 1884	Calcic Oxalate	132	"	
4	69	M	Brighton	1 year	Litholapaxy	Jan. 21, 1885	Phosphatic	98	Died	Death from bronchitis
5	53	M	Charlestown	2 or 3 years	"	Jan. 28, 1885	"	78	Recov.	
6	61	M	Milton	1 year	"	May 11, 1885	"	94	"	
7	67	M	New Brunswick	5 months	"	June 11, 1885	"	121	"	Structure divulsed
8	73	M	New Brunswick	2 or 3 years	"	June 24, 1885	"	20	"	
9	57	M	Brookline	A few weeks	"	Oct. 5, 1885	Uric Acid	10	"	
10	20	M	New Brunswick	6 months	"	Oct. 10, 1885	Phosphatic	113	"	Leather shoe-string nuc.
11	67	M	Boston	1½ years	"	Oct. 23, 1885	Uric Acid	150	"	Epidydimitis, etc.
12	47	M	Providence	1 year	"	Nov. 6, 1885	"	80	"	
13	60	M	Boston	1 year	"	Nov. 10, 1885	Phosphatic	140	"	
14	50	M	Boston	2 months	"	Dec. 27, 1885	Uric Acid	23	"	Multiple Calculi
15	75	M	Needham	3 months	"	Feb. 9, 1886	"	19	"	
16	74	M	New Brunswick	9 months	"	Mar. 30, 1886	Phosphatic	34	"	Second Oper. on No. 8
17	70	M	St. Louis	1 or 2 years	"	May 26, 1886	Uric Acid	143	"	
18	48	M	Dakota	2 years	"	Sept. 4, 1886	Phosphatic	68	"	Strieture divulsed
19	53	M	Portsmouth	2½ years	"	Sep. 11, 1886	Uric Acid	225	"	
20	68	M	Brookline	1½ years	"	Sep. 12, 1886	Phosphatic	265	"	
21†	49	M	Medfield	8 years	Sup.-pub. Litho'my	Sep. 15, 1886	....	1180	"	Strict. and false passages
22	53	F	Kingston, N. H.	Several years	Litholapaxy	Sep. 20, 1886	Phosphatic	140	"	
23	60	M	Martha's Vineyard	5 or 6 months	"	Oct. 29, 1886	"	95	"	Prostatotomy done at
24	63	M	Boston	5 or 6 months	"	Nov. 9, 1886	"	79	"	[same oper.

* See Boston Medical and Surgical Journal, Aug. 28th, 1884. † See Boston Medical and Surgical Journal, Nov. 11th, 1886.

micturition with an occasional sudden stoppage in the full stream, hæmaturia and pain on riding in a wagon. These symptoms had existed for about a year, and Dr. H. E. Marion, of Brighton, had sounded him, and detecting a stone, had sent him to the hospital. The patient was a feeble old man with a weak pulse. An examination of the urine showed nothing beyond alkaline fermentation with purulent sediment. By the kindness of Dr. Bigelow, in whose ward he entered, I operated on January 21st. The stone was small and soft, weighing only ninety-eight grains, and the lithotrite was introduced but twice. On the following day he was very comfortable, was passing urine in good quantity, and had no tenderness or discomfort about the bladder. He had, however, a troublesome cough with profuse purulent expectoration.

January 25th, his cough was worse. Abundant sonorous and sibilant râles were to be heard over both sides of his chest with fine moist râles over the right lower front. There was considerable dyspnœa and his breath was very foul. The urine was almost clear and he had no bladder symptoms whatever.

From this time the condition of his lungs gradually became worse and he finally died on the 30th of January, nine days after the operation. No autopsy was allowed, but clinically it was evident that the fatal issue resulted from bronchitis and secondary pneumonia, and that his bladder was in good condition at the time of his death.

In only one case (No. 11), did any serious symptoms result directly from the operation. This patient was a man of sixty-seven, and infirm for his age. I saw him in October, 1885, in consultation with Dr. J. P. Reynolds, who kindly transferred him to my care.

For one and a half years he had had frequent, painful micturition, with a good deal of pain through the penis, which was greatly aggravated by riding. For the previous eight months he had had frequent attacks of hæmaturia. Otherwise the urine was that of an ordinary cystitis. For a long time he had lived alone, and, eating but little, had gradually acquired the habit of taking a good deal of stimulant, often more than a pint of whiskey in a day.

The sound touched a stone and on October 23d, 1885, I operated by litholapaxy under ether. A hard, uric-acid stone of good size was crushed and removed. At the first use of the evacuator, a sharp, angular fragment caught in the eye of the tube and scratched the urethra considerably in its withdrawal. With this exception the operation went smoothly and at the third pumping, the bladder was found to be empty. On the following day there was a considerable rise of temperature (102.5° F., in the evening), and on the second day after the operation it rose to 104.5° F. At this time no casts could be detected in the urine.

On the fourth day the temperature fell to about 100° F., but on the fifth day it again suddenly rose to 104.6° F., at night, and the patient became delirious and tremulous. On this day an epidydimitis started in the right testicle. On the sixth day, the fever continuing, the urine contained a trace of albumen and a few hyaline, granular and epithelial casts.

It was now found that by increasing the amount of stimulus to about a pint of whiskey a day, the tremulousness and delirium could be controlled. As the epidydimitis subsided, the fever slowly left him and the casts and albumen disappeared from the urine. Convalescence, although tedious, was steady, until he left the Hospital, six weeks from the time of operation.

(To be continued.)

REPORT ON PROGRESS IN OPHTHALMOLOGY.

BY O. F. WADSWORTH, M.D., AND MYLES STANDISH, M.D.

STILLING[1] asserts that no one of the theories of the cause of myopia hitherto formulated has taken firm root. The accommodation theory is now generally disbelieved. There are strong arguments against the convergence theory; Arlt has pointed out that staphyloma is never developed in convergent strabismus; and myopia and staphyloma have developed in eyes which never had binocular vision.

The chief element in the production of myopia is to be sought in the action of the muscles, and especially in that of the superior oblique, which, with the inferior rectus, is in a state of continued contraction during near work. Examination of fifty eyes *in situ* showed that the course and insertion of the superior oblique is extremely variable, and its action, therefore,

[1] Bericht der Ophthalmologischen Gesellschaft, Heidelberg, 1881.

very inconstant. It may run nearly transversely, or so obliquely as to approach a median direction; may be inserted far from the optic nerve, or send prolongations close up to the nerve or to its outer side. According to these variations, contraction of the muscle either causes compression and dragging, compression or dragging alone, or neither of these effects. These observations awakened the idea that the constant pressure of the muscle in reading and writing during the period of growth of the eye might produce myopia, and that the variations in direction of the staphyloma and in the shape of the disc might be explained by the different insertions of the obliquus tendon. To decide this point a second series of fifty eyes was examined in company with the anatomist Pfitzner, and it was demonstrated that the course and insertion of the obliquus was in close correspondence with the form of the eye and the shape of the disc. Stilling states that it is a mistake to consider the normal eye a quite regular structure; that this is true only of the anterior portion, but behind the ciliary body there are often irregularities of shape.

Further, a number of myopic eyes were examined. Two of these were of special interest because the refraction during life (M. 5 D.) was known. The only abnormity in these eyes was a slight enlargement of the outer part and a corresponding distortion of the papilla. These eyes were normal, the moderate increase in length was in exact correspondence with the insertion of the obliquus. One was 25 mm., the other 26 mm. long, yet both had the same refraction. This fact led to the measurement of the radius of curve of the cornea in a number of myopic eyes to determine its influence. In the weaker degrees of myopia it was found larger, in the higher degrees smaller. The curve of the cornea, Stilling believes, determines the degree of the myopia.

The ordinary myopia, Stilling concludes, is due to the influence of pressure during growth; but such a myopia is not disease; the eye is not diseased, but only slightly deformed.

It is different with the highest degrees of myopia; there is disease, a hydrophthalmus; yet the eyes are not diseased because they are myopic, but myopic because they are diseased. It is only in such diseased eyes that the widening of the space between the nerve sheaths and the separation of the outer sheath from the sclera is found. The two forms of myopia should be distinctly separated.

In the discussion which followed the reading of Stilling's paper, Cohn, while protesting against the view that the so-called school-myopia was not important as a disease, agreed with the opinion expressed that all the theories of the cause of myopia were unsatisfactory. Against the convergence theory particularly he adduced his recent investigations of watchmakers. He had examined one hundred watchmakers in Freiburg who never used the magnifying lens. These men worked on the finest machinery, pivots, screws of 1–2 mm. diameter, twelve hours daily; their eyes were generally but six inches from their work. Yet in spite of all this, only three of the hundred had during many years' work acquired myopia, and in the three it was only of small degree. The light was indeed excellent, but although converging excessively all day, and beginning at fourteen years of age, an age at which myopia often begins at school, these men had not become myopic. He had also examined a large number of seamstresses who had been occupied for years all day long over the finest embroidery, and found none myopic. Furthermore, it was a matter of common observation that proportionally very few myopic tailors present themselves at the policlinics. It was a probability that he had already suggested, that the close observation of small but fixed objects, as is the habit with watchmakers, is less harmful to the eye than the following of the lines in reading, writing and drawing, with the ocular movements which these occupations necessitate.

MEANS FOR THE PREVENTION OF MYOPIA.

Priestly Smith[2] in an article on "Means for the Prevention of Myopia," enumerates the following essentials for a school desk:

(1) The seat must be of such a height as will allow the scholar's feet to rest flat on the floor or footboard, and broad enough to support the greater part of the thigh.

(2) The seat must have a back placed at such a height as to fit the hollow of the back below the shoulder-blades, and support the body in a vertical position.

(3) The near edge of the desk must be just so high above the seat that when the scholar sits square and upright, with elbows to the sides, the hand and forearm may rest upon the desk without pushing up the shoulder.

(4) As used in writing the desk must have a slope of ten to fifteen degrees (about 1 in 5); as used in reading it must support the book at an angle of about forty-five degrees, and at a distance of at least twelve inches from the eyes — sixteen inches is better.

(5) As used in writing, the edge of the desk must overhang the edge of the seat by an inch or two, in order that the scholar shall not need to stoop forwards, and that the support to the back may be maintained.

(6) Either the desk or the seat, or some part thereof, must be movable at pleasure, so that although the desk usually overhangs the seat, the scholar may be able at any time to stand upright in his place.

(7) The desks and seats must be of various sizes, in order that the foregoing conditions may hold good for scholars of various ages.

DIRECTION OF LYMPH STREAMS IN THE EYE AND THEIR INFLUENCE IN SYMPATHETIC OPHTHALMIA.

Gifford[3] reports the results of forty experiments on rabbits undertaken for the purpose of determining the direction of the lymph streams in the eye. The results obtained were definite and constant.

A small drop of sterilized water containing india-ink or cinnabar in suspension was injected into the vitreous. There was generally little or no reaction, and on the next day or later, the particles could be seen, by the use of the ophthalmoscope, collecting in the optic excavation, and if the animal was killed a day or two after this, the microscopic examination of longitudinal sections of the optic nerve showed the whole course of the central canal marked by a line of the pigment, which passed out of the nerve with the vessels and could be traced toward the rear of the orbit.

Microscopically it could be seen that the granules were contained in the lymph spaces around the vessels, partly free, and partly enclosed in connective tissue corpuscles and the occasional leucocytes. Besides the

[2] Ophthalmic Review, June, 1886.
[3] Archives of Ophthalmology, 1886, p. 153.

granules along the main trunks, they were also present along all the smaller branches which radiate into the choroid and, farther back, into the periphery of the nerve. When the pigment was introduced near the posterior pole of the eye, it was discharged very promptly. The farther forward the injections were made, the longer the time required for the powder to reach the papilla, and the smaller the proportion of free granules. Outside the optic nerve the pigment kept close to the sheaths of the vessels and was traced to the posterior end of the orbit; here in all probability it entered the cranial cavity through the sphenoidal fissure. A small quantity of anthrax culture was injected into the posterior portion of the vitreous, and on the following day an exudation could be seen filling up the optic excavation and often concealing the papilla. The bacilli followed precisely the same channels as those into which the granules were carried, except that they did not enter the finest channels. As they multiplied wherever they were carried, they were found in considerable numbers in the orbit. From here, as will be shown in what follows, they were carried down into the intervaginal space of both nerves. These experiments were repeated on cats, dogs, and guinea-pigs, and, ophthalmoscopically, the accumulation of granules on the papilla was observed in these cases as in the experiments upon rabbits.

In regard to the lymph stream in the intervaginal space, our author's experiments were entirely confirmatory of Quincke's in 1872. The latter trephined the skull and injected cinnabar in suspension into the subdural space of rabbits and dogs: he found that the powder, besides reaching the spinal canal, was invariably carried down in considerable quantities, sometimes within a few hours, between the optic sheaths in both subdural and subarachnoidal spaces to the globe. The greatest quantity was always found next the eyeball. Cinnabar, anthrax bacilli, and blood, brought down in this manner from the cranium to the globe, are severally carried out into the orbit by the posterior vitreous stream. On the other hand, this latter shows not the slightest tendency to pass into the subvaginal space. With regard to the passage into the supra-choroidal space, it was noted in three cases that anthrax bacilli carried down between the sheaths from the brain, could be clearly traced for half a millimetre between the choroid and sclerotic. With regard to the outflow from the vitreous around the lens, our author reserves his experiments for another paper, but states that "the results of the experiments already made, have convinced me, rather against my will, that besides the posterior vitreous stream there is also an anterior stream flowing forward around the lens; as is, of course, generally accepted.

Gifford[4] follows this article by another upon the influence of these lymph streams in the propagation of sympathetic ophthalmia.

Deutschmann, as is well known,[5] by injecting into the vitreous of rabbits the ordinary white and yellow pus-cocci, was able, almost without exception, to obtain well-marked sympathetic neuro-retinitis of the fellow-eye. The time required for its development varied from a few days to three weeks. With the microscope the micrococci could be traced from one eye to the other by the way of the optic nerves, their sheaths, and the chiasma.

[4] Archives of Ophth., 1886, p. 280.
[5] See Journal, Vol., xiii, p. 176.

Our author failed altogether to obtain an unquestionable inflammation in the fellow-eye in twenty-one cases in which he inoculated the vitreous of rabbits with pure cultures of pathogenic cocci. Staphylococcus pyogenes aureus was used in nine cases; staphylococcus pyogenes albus in eight cases; and streptococcus pyogenes albus in four cases. The inoculated eye invariably underwent a severe inflammation, which generally became chronic and ended in more or less pronounced phthisis. The microscopic examination showed, according to the stage, the vitreous chamber filled with a purulent or semi-caseous exudation, and the layers of the choroid pressed apart by a dense infiltration of round cells; the deep physiological excavation plugged with the same; and the retina, more or less thoroughly disorganized. The lymph spaces around the central vessels of the optic nerve, the orbital tissue below the nerve itself, for a distance of 3-4 mm. back of the eyeball, were all markedly infiltrated with round cells. The orbital tissue and the pial sheath were especially strongly affected in the neighborhood of the exit of the central vessels from the nerve into the orbit.

The difference between Deutschmann's observations and Gifford's, is as follows. Deutschmann describes the micro-organisms as occurring all through the first eye and in both optic nerves and their sheaths, without mentioning any special relation to blood or lymph vessels. In Gifford's cases they were generally limited to the vitreous of the inoculated eye, occurring in greatest numbers in the exudation just before the papilla and just behind the zonula. In no case were they found farther back than the bottom of the physiological excavation. In the infiltration filling the central canal, along the small vessels of the nerve, in the sheaths, subvaginal space, and orbital tissue, he searched for them long and in vain. Why the micrococci are not swept out into these canals and spaces, as it has been shown in the previous paper, particles of india-ink and cinnabar are, depends, in all probability, on the choking of the lymph vessels with leucocytes, which was a marked feature of all these cases.

Convinced by these experiments that with the rabbits obtainable at Erlangen and Zurich, it was practically impossible to produce sympathetic ophthalmia with a fungus that excited a quick and strong reaction, and equally convinced by experiments with amorphous powders that a micro-organism capable of living in the lymph without exciting too intense an inflammation, must of necessity be carried around from one eye to the other, our author found such an organism in the bacillus of anthrax. This bacillus Gifford succeeded in tracing from the vitreous of one eye around to the perichoroidal space of the other, although the course was completed in but three out of twenty-five cases, owing to the rapidity with which the animals die when the subconjunctival tissue is inoculated, and in making injections into the vitreous, it is exceedingly difficult to avoid such inoculation.

We must now consider how far these results can be used in explaining the phenomena of sympathetic ophthalmia in man. First, with regard to the lymph stream from the vitreous, our author assumes that a condition occurring in animals so widely separated as cats and rabbits, also exists in man, there being no anatomical peculiarities to make it unlikely. This also holds good of the stream in the intervaginal space. When, however, we come to the passage from the

latter into the space around the choroid, we have the well-known fact that the supra-choroidal space can be injected from the intervaginal space with ease; the papilla and retina, on the contrary, with difficulty or not at all. With regard to the clinical history of these cases, the most difficult point to explain is why we have no cranial nor orbital symptoms in sympathetic ophthalmia if the micro-organisms pass through these cavities on the way to the second eye. Our author's explanation is that there undoubtedly is a slight lymphangitis in the orbit and meningitis at the anterior part of the base of the brain, but that the lymph stream generally keeps the micro-organisms from collecting in sufficient numbers to do serious mischief at these points, and he reminds us that certain pathogenic bacteria, as pus-cocci, pass from one part of the body to another, producing merely a slight lymphangitis on the way, and causing no severe inflammation until they accumulate, as, for instance, in the lymphatic glands.

The fact that in so many of these experiments the posterior lymph channels were quickly closed against the passage of micrococci, Gifford thinks explains the non-occurrence of sympathetic trouble in many cases where the primary inflammation in the first eye is violent. Leber and Deutschmann have sought the explanation of this non-occurrence after panophthalmitis, in the supposed destruction of the fungi by the violence of the suppuration and in the emptying of the infectious contents when the eye bursts.

INNERVATION OF PUPIL AND CILIARY MUSCLE.

Mr. Jessop [5] has brought forward arguments to show that the fifth nerve is concerned in some of the functions of the pupillary and ciliary muscles. The pupil not only contracts when the ciliary muscle does so, but also dilates when the latter relaxes; the latter act, Mr. Jessop states, is carried out through the intermediation of the long ciliary nerves from the nasal branch of the fifth. The ordinary light-reflex of the pupil takes place through the agency of the third nerve; and the cervical sympathetic, as the inhibitory nerve, causes the dilatation of the pupil. In mammals the two chief motor functions of the pupil are thus separated; whereas in birds, possessing voluntary control over the irides, this is not so, for the cervical sympathetic has no control over the pupil, the nerve causing dilatation being the fifth. Mr. Jessop draws a clear distinction between the modes of action of cocaine, eserine, and atropine on the neuro-muscular intra-ocular apparatus. The first of these agents acts on the terminations of the cervical sympathetic in the iris, and probably of the fifth in the ciliary muscle; whilst the action of the other two drugs is on the muscular tissue directly. Hence it is that, even after section of all the nerves going to the intra-ocular muscles, atropine and eserine can cause further dilatation or relaxation, and contraction, respectively.

NEURO-RETINITIS IN BRIGHT'S DISEASE.

C. S. Bull [6] in an article upon exudative neuro-retinitis associated with chronic Bright's disease, says that the period of duration of the disease, when the eyes were examined, as indicated by the occurrence of the symptoms, was very difficult to determine. Of the 103 cases observed, in 56 cases, or more than 50 per cent., it was entirely unknown. In 47 cases, or somewhat less than 50 per cent., it varied from six months to several years. The sex of the patients was nearly evenly divided, 56 being men and 47 being women. The vision ranged from $\frac{20}{20}$ to zero. It was improved in 32 cases, or about 31.5 per cent., but this was mainly due to improvement in the renal disease and in the general health, for, as the disease in the kidneys reasserted itself and the general health failed, fresh exudation, or hæmorrhages, or both occurred in the retina, and vision again deteriorated. Uræmic amblyopia or transient attacks of more or less complete blindness in one or both eyes occurred in 37 cases, but in all these cases there was retinitis or neuro-retinitis. Both eyes were affected either at the time of the first examination or subsequently in ninety-three cases. Both optic nerve and retina were inflamed in both in about 25 per cent. of the cases. In 34 cases there were no hæmorrhages. In 30 of these 34 cases there was hypertrophy of the left side of the heart, while among the 69 cases in which hæmorrhages occurred there were five in which there was no cardiac disease demonstrable. The retinal hæmorrhages were associated with a diseased condition of the bloodvessels.

Bull examined these cases with special reference to the duration of life, and was impressed very strongly with the extremely unfavorable prognosis to be made, and with the comparatively short lease of life which these patients still possess. Of the 103 patients examined, extending over a period of thirteen years and six months, 86 have died and 17 are still living. Of the 86 who have died, 57 died within the first year; 18 within the second year; six within the third year; four within the fourth year; and one within the sixth year. Of the 57 who died within the first year, 30 died within six months. Of the 17 patients who are still living, 14 were seen for the first time within the last six months, and in all but one of these fourteen the renal disease had probably lasted a long time. Two of those still living were first seen within the past year, and one of the seventeen was first seen seven years ago and has been examined at intervals since.

PARALYSIS OF INTRA-OCULAR MUSCLES AFTER DIPHTHERIA.

Remak [7] writes as the results of the observation of 100 cases of post-diphtheritic paralysis of the intra-ocular muscles that the amount of the paralysis varied greatly. In some cases it was so light as only to bring to the surface a certain amount of latent hypermetropia, and in some it required +4.00 D. to enable the patient to read small test letters at ten or twelve inches. He divides his cases into three classes: severe, requiring from +3.00 D. to +4.00 D. to read with, as above; medium, requiring +1.50 D. to +3.00 D.; and light, needing less than +1.50 D. Dividing his cases as above, he classifies 24 cases as severe, 16 cases as light, and the remaining 60 cases as of medium severity. He states that severe paralysis sometimes follows a very mild attack of diphtheria, and that the converse is also true.

In these 100 cases there was not a single case of optic neuritis.

— The recent death of Lady Wilson brings to the Royal College of Surgeons, $1,000,000.

[5] Lancet, June, 1886, p. 123.
[6] New York Med. Jour., Vol. xliv, p. 119.
[7] Centralblatt f. prakt. Augenheilk.

Clinical Memorandum.

SPONTANEOUS FRACTURE OF STONE IN THE BLADDER.[1]

BY F. S. WATSON, M.D.

THESE fragments of stone were taken from the bladder of a patient of eighty years of age, after death, who, for some years previous, had been the unconscious subject of hypertrophy of the prostate until ten days before his admission to the City Hospital, when he had an attack of retention of urine, following exposure to wet and cold. He was relieved by catheterization, and had no further trouble until the day before his entrance to the hospital. He then had another attack of retention; a catheter failed to pass into the bladder, and a false passage was made in the prostatic urethra in the attempts to introduce it. He applied at the hospital for relief, and after some difficulty, owing to marked obstruction in the prostatic urethra, a silver catheter was introduced and allowed to remain in the bladder, through which was gradually drawn off a large quantity of bloody alkaline urine. Shortly after this the patient developed urinary fever, and died in a week.

At the autopsy, the bladder was found to be thickened and trabeculated, the prostate hypertrophied, both centrally and laterally. Behind the greatly enlarged third lobe, was a deep *bas fond*, formed by the bulging downward of the floor of the bladder, in the bottom of which lay the fragments of stone herewith shown. The mucous membrane of the bladder was the seat of a hæmorrhagic cystitis, and in places, also of a diphtheritic membrane. The pelves of the kidneys, and the organs themselves were occupied by an acute inflammatory process.

The pieces of stone had peculiar characteristics, which at once attracted attention, and suggested, in the absence of a sufficient mechanical force from without, that their fragmentation was the result of spontaneous fracture. As cases of this sort are rare, I have thought it worth while to show this one as an example.

The weight of the whole mass was one hundred and sixty grains, and it is composed almost wholly of uric acid. Much of the stone consists of bits having no clearly-defined form, and of sand; the rest of fifty-six pieces, varying in size from a quarter to a whole good-sized pea. Eight of the latter are represented in the accompanying photograph (enlarged three diameters), and fall, as to shape, into two groups, the first having the appearance of parts of an outer shell, or surface of a sphere, which has been cracked off, and present a convex and a concave surface, as in the specimen marked 1. The remaining fifty-two fragments show for the most part a smooth, convex back, projecting forward from which is a two, three, four, or many-sided body. The surfaces of these sides show a great similarity, and some of them can be made to very nearly fit into each other, and evidently would do so quite exactly in some instances, had not their angles and edges become somewhat rounded from having received a deposit upon them subsequent to their having separated. Four, however, were found which had fresh surfaces, showing a more recent splitting apart, which fitted each other in pairs precisely (one pair is numbered 2 in the accompanying photograph). The segmentation in this case seems to have taken place in two ways: by clefts radiating from the centre, and by the separation of the outer crust or layer from the one below it. These processes are indicated in the bits numbered 3 and 4.

The introduction of a silver catheter was the only force which could have acted upon the stone in this case from without, and this would have in all probability been insufficient to accomplish its disintegration; and, moreover, we have evidence in the rounded angles of most of the fragments that they must have lain in the bladder for a longer time than sixteen days, which was the time from the first introduction of the catheter to the patient's death. In view, therefore, of this fact, and of the forms of the fragments, which show, I think, conclusively, that the fragments originally belonged to one or more stones, we are justified in assuming that they represent the spontaneous rupture of stone in the bladder.



The only references to this subject which I have found in the writings upon stone are those of Boulouminé (*Union Med., Par.*, 1877, 3d S., xxiii., 25); William Ord (*Trans. Path. Soc., London*, 1876–1877, xxviii., 170); Von Thaden (*Arch. für Klin. Chir., Berlin*, 1865, vi., 202).

The first narrates the case of the spontaneous frac-

[1] Reported at the Society for Medical Improvement, Boston, November 22, 1886.

ture and passage of a number of fragments from a stone which had been recognized to be of considerable size by the sound, but as its disintegration was assisted by a lithotrite, the case is unsatisfactory.

William Ord showed the fragments of a stone passed spontaneously by a man of eighty-three years. The fragments were segments of a sphere or spheres, having a central cavity. The stones were of uric acid, coated with neutral urates. The author attributes the fracture to a sudden expansion of the central nucleus. No instruments had been used, and no force exerted from without.

Von Thaden describes the spontaneous passage of one hundred and eighty fragments of stone from a patient eighty years of age. They were of uric acid and the triple phosphates, and were chiefly in two forms: shells with concave and convex surfaces, and rounded segments, whose convexities approximately fitted into the concavities of the shells. No instruments had been used. The author also notices the following cases:

Specimen 1945, Walterischen Museum's; nine wedge-shaped bits removed from a patient of fifty years, which could be so adapted to each other as to form one symmetrical stone, weighing 3ij ℈ß.

Walther (*Med. Chir. Schatz Leipzig*, 1715), twelve fragments which had spontaneously fractured in the bladder, which could also be so placed together that, their surfaces fitting, made one stone. No force had been used to cause its fracture.

Crosse speaks of several cases, amongst which was one in which the stone was extracted whole, and subsequently fell in pieces.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

E. M. BUCKINGHAM, M.D., SECRETARY.

November 22d, 1886. The President, Dr. F. W. Draper, in the chair.

SPONTANEOUS FRACTURE OF STONE IN THE BLADDER.

Dr. F. S. Watson reported the case and showed specimens and a photograph.[1]

Dr. A. T. Cabot inquired if these were fragments of one or several stones.

Dr. Watson stated his impression that there were more than one, his reason being that the fragments were so much alike in size.

Dr. Cabot remarked upon the short radii of the different curved surfaces. He thought that small stones had been ground together.

Dr. E. S. Wood said that the color suggested urates or phosphates; but that chemical examination of some of these specimens of Dr. Watson's, which had been referred to him, showed them to be nearly pure uric acid. Uric-acid calculi are among the more friable ones.

Dr. J. B. Ayer reported

A CASE OF CHRONIC INTERSTITIAL NEPHRITIS.

Patient, fifty-one years old, colored, came to Boston at an early age. His father died of some urinary trouble, and his brother of chronic Bright's disease. He consulted Dr. Ayer for dizziness nine months ago, when the urine, examined merely as a matter of routine, was found to contain albumen, estimated at three-fourths of one per cent. Numerous specimens since examined have been estimated to contain from one-half to three-fourths of one per cent. Up to a month ago, when he gave up business, the average specific gravity of these specimens has been 1015, and the average amount of urine two or three pints. During the past month the specific gravity has averaged 1011 and the amount has steadily diminished. Three days before death, when little fluid was taken, the amount was ℥xxii.

When first seen, twenty-three grammes of urea were voided in twenty-four hours, somewhat less than two-thirds the normal amount, but this quantity was quickly diminished to eighteen grammes.

On the fifth, fourth and third days before death the average urea in the urine was eight grammes, less than one-quarter the normal.

As a rule no casts were found — the few which were seen were hyaline or granular.

Palpitation, although the heart was much enlarged, was not a troublesome symptom. On one occasion only was a mitral souffle detected. Nausea was quite constant, although vomiting rarely occurred. Milk diet at times was very repulsive. Subcutaneous œdema was absent. His prominent symptoms were increasing muscular weakness and mental worry.

While active there was only one occasion, at a concert, when he came near loss of consciousness.

When his mind was not occupied he was constantly directing his attention to himself, and by night he was sometimes bewildered, toward the end of his life, but while attending to his duties the mind was clear, and when not fatigued he did not seem ill. Œdema of the lungs and coma were present during the last forty-eight hours of life.

Dr. E. G. Cutler, who showed the specimens, said that the chief interest lay in the kidneys. They were estimated to weigh five, and four and a half ounces respectively. The capsules were quite adherent and numerous small cysts were found scattered over the uneven surface. The color was dark, mixed with yellow. On section the kidneys were dense, the cortex was ill-defined and its malpighian bodies and tubules not easily seen. The color was mottled yellowish red; there was great injection. A microscopic examination showed an increase of interstitial tissue, a thickening of the capsule in many of the malpighian bodies, certain capsules sclerosed, many tubules denuded of their epithelium and dilated and tortuous. Here and there casts, both granular and hyaline in the convoluted tubules — hyaline casts in the looped tubules, and a thickening of the arterial tunics. The capillaries were large and filled with blood.

The heart weighed over two pounds and was of good color and consistence, the enlargement being wholly in the left ventricle. There was no disease of the valves.

Dr. M. H. Richardson reported a case of

SPERMATORRHŒA.

The patient has ejaculations on the slightest provocation, the touch of a razor to the face being enough to cause one. He also complains of ejaculation during defecation. A specimen of the fluid lost during this

[1] For Dr. Watson's report see page 524.

act had been secured and was shown to the meeting. It proved to contain spermatozoa. Before seeing Dr. Richardson, cold sounds had been used for three years, and deep injections, both without effect. The patient asks to have the prostatic urethra cauterized, and Dr. Richardson is inclined to make use of this treatment.

DR. WATSON said that he thought that physicians underrated the frequency and importance of true spermatorrhœa, which was generally treated as existing chiefly in the imagination of the patient, the thick, gummy discharge, of which they complained as occurring at the end of urination or during defecation, not being examined microscopically. If this be done, a certain number of specimens will be found to contain spermatozoa, generally dead, owing to having been passed back into the bladder and lain for some time in the urine. The mental depression, and hypochondriasis associated with this condition as well as a train of symptoms too long to enumerate here, that are generally observed in this malady are very marked, and constitute its most difficult feature in treatment. The actual local condition, which consists in hyperæmia, and disturbed innervation, are generally greatly improved by large cold steel sounds, or the hollow sound rendered cold by a current of water, and deep injections of nitrate of silver, never stronger than five grains to the ounce, and preferably one or two grains to the ounce. Dr. Watson did not believe in cauterizing the prostatic urethra in these cases, a practice originating with Lallemand, and thought that it might eventuate in stricture.

DR. ARTHUR T. CABOT read a paper entitled

NOTES ON THE TREATMENT OF STONE IN THE BLADDER, WITH CASES.[2]

DR. WATSON said that he thought none of us, whether we have made a special study of stone in the bladder, or only viewed it with the interest attaching to any of the great chapters of surgery, can fail to be much interested in, and to learn something from Dr. Cabot's paper. He is, moreover, to be congratulated upon the results of treatment in this series of cases.

As the author of the communication has pointed out, the question of the treatment of stone has of late become focused upon two operative procedures (with the exception of the cases occurring in children) the litholapaxy of Professor Bigelow, and the high cut above the symphysis pubis, as improved by Petersen. In regard to the former nothing need be added to what Dr. Cabot has said in his paper. With respect to the latter, we cannot yet say if other improvements may not place it on an equal footing with its brilliant and already successful competitor. One of these would be the discovery of some way of so entering the bladder wound as to secure a union by first intention, which would materially shorten the course of convalescence, and abate the dangers arising from the presence of urine in the wound. There have already been several successful results of bladder suture, but they are not yet sufficient in number, to warrant the hope that primary union will be the rule. It must be remembered, in comparing the statistics of litholapaxy with those of the high cut, that until recently only cases which were deemed unsuited to or impossible by the former operation, were reserved for the latter. Nevertheless the disparity between the mortality of twenty per cent. in the supra-pubic operation and three per cent. in litholapaxy, is too great to be wholly accounted for on this ground, and until the numbers shall become more equalized, we do not need to be accused of local prejudice in giving preference to litholapaxy when it can be done.

The speaker was glad that Dr. Cabot had pointed out the importance of the habitual and systematic use of the catheter in the after-treatment of stone which occurs in connection with hypertrophied prostate, a fact not much dwelt upon in writings on the subject. The residual urine behind the dam made by the prostate in such cases, forms a pond in which sediment very readily forms, and may lead to the early recurrence of stone.

There is also one point in regard to the formation of phosphatic stone, of which the author did not speak, and which, though not of frequent occurrence, has some importance. He referred to those cases in which the phosphatic formation is not due primarily to decomposition and alkalinity of the urine in the bladder, but to the condition known as phosphaturia, in which the urine, as it is excreted by the kidney, is already neutral or alkaline, and the amorphous phosphates are precipitated sometimes before they reach the bladder.

In this condition the phosphates are either found in excess, or as is more generally the case, are precipitated by the absence of a sufficient quantity of acid phosphate of sodium to hold them in solution. Clinically, the condition is easily recognized by the fact that the amorphous phosphates appear at the end of urination as a distinct milky-white discharge, often passed with some pain and vesical tenesmus, and by the fact that the alkalinity of the urine is due, not to a volatile ammonia, but to a fixed alkali. The last distinction can be easily made by heating the urine in a test-tube, having previously stretched a bit of test paper across its mouth. If the alkalinity be due to ammonia, the paper will show the characteristic reaction, if to a fixed alkali, it will not. Recognition of this condition is important, with respect to treatment. In phosphaturia, one would not expect to remove the cause of the trouble by local treatment of the bladder, but should direct his efforts to overcoming the alkalinity of the urine in the kidney. This may be accomplished in some cases by supplying the wanting acid, in giving dilute phosphoric acid, from ten to fifteen drops thrice daily, in a half-glass of soda water.

In conclusion, Dr. Watson wished to say a word about the use of cocaine in stone operations. Where, for any reason, it is undesirable to give ether, this drug may be employed with advantage, and a litholapaxy be performed, which could not otherwise have been done without encountering the risks of etherization on the one hand, or inflicting great pain on the other. He had operated upon one patient in this way about a year ago, with entire absence of pain, the operation lasting half an hour. It is quite safe to use a ten per cent. solution in the bladder, owing to the fact that absorption does not go on readily from its coats, and an ounce or two may be introduced into an empty bladder, and repeated if the operation be prolonged.

DR. J. W. ELLIOT said that stone in the female bladder is commonly formed upon the stitches put in for the cure of a vesico-vaginal fistula, or upon foreign bodies introduced by hysterical patients. Treatment is by dilating the urethra, crushing, and drawing out

[2] See page 518.

the pieces; by cutting into the base of the bladder through the vagina; or by litholapaxy.

Drawing the crushed stone through the dilated urethra, formerly the common operation, sometimes causes great laceration. Opening the base of the bladder is a simple operation and has been done many times with success. Litholapaxy, done with the modification of Dr. Cabot, may often be the better way. Dr. Cabot had in conversation, suggested to him what he had to-night shown upon the blackboard, and he had made practical use of the suggestion in an operation. With the patient unetherized, he could not elevate the handle of the lithotrite enough without causing pain, and he could not crush the stone. But on etherizing and then holding the handle vertically, as Dr. Cabot had proposed, the stone fell into the instrument; and this happened every time that it was tried.

Dr. H. L. Burrell said that he had been very much interested in Dr. Cabot's admirable paper. His own experience in litholapaxy had been limited to four cases, but had been rather an eventful one. The first case had rather a protracted convalescence, the second recovered promptly. The third case was that of a feeble man, aged seventy-six, who for a number of years had been living a "catheter life" owing to an enlarged prostate. Had at times hermaturia with pain in the end of the penis, urine clear and cloudy by turns, at one examination albumen and granular casts were found. A stone was found, and under ether a No. 2 lithotrite was introduced and the stone was crushed. Two hundred and twenty grains of detritus were evacuated; the lithotrite was again introduced and more fragments of stone were crushed; on reintroducing the evacuating tube (straight), a slight obstruction was felt, it was withdrawn, and several attempts were made to repass the tube into the bladder; this was thought to have been accomplished when the evacuator was attached, but it was found that the rubber bulb would not expand. An explanation was sought, and on introducing the finger into the rectum the tube was found resting in the tissues between the bladder and rectum. A rupture of the urethra had occurred. The evacuating tube could not be passed into the bladder, hence a median perineal cystotomy was performed, much difficulty being experienced in entering the bladder; the fragments which remained were partially evacuated and the patient was returned to bed. He never rallied from the shock and died some six hours later. In reviewing the case the operator remembered distinctly a slight grating hitch on removing the lithotrite the second time, and doubtless a sharp fragment of stone was drawn from the bladder into the membranous urethra, where it rested until the evacuating tube was reintroduced. This pressed the sharp fragment backward, tearing the floor of the urethra, and on again passing forward the evacuating tube, it engaged in this false passage. When the cystotomy was performed, a fragment of stone was found between the urethra and rectum which would support the above explanation. Dr. Burrell said that he spoke of the case to emphasize one of the dangers of litholapaxy, that of drawing fragments by the lithotrite or tube into the urethra, where they might do irreparable damage.

The fourth case that he had operated upon was remarkable for the size of the stone and the length of time consumed in removing it. The patient was a healthy farmer, aged thirty-five, from Nova Scotia, who had suffered from symptoms of stone for three years. He was an ideal patient to stand a prolonged operative procedure, being thin and very muscular. The stone was crushed with some difficulty, as the lithotrite kept getting clogged. The operation lasted five hours and a quarter and the quantity of calculous material was 3,360 grains before being dried, and 2,400 grains after drying. The convalescence was uninterrupted except that an abscess formed over the sacrum from the prolonged pressure on the operating table. Dr. Burrell thought that this was one of the largest stones that had ever been crushed and successfully removed. In three weeks the patient returned to his home, completely well.

Dr. Cabot said that the case was one of triumph for litholapaxy. Mr. Keagan has reported crushing a stone of 2,800 grains, a little larger than Dr. Burrells.

THIRD ANNUAL MEETING OF THE NEW YORK STATE MEDICAL ASSOCIATION,

NOVEMBER 16, 17, 18.

DISCUSSION ON SHOT-WOUNDS OF THE INTESTINES. NOVEMBER 16.

The discussion was opened by a paper by Dr. Wm. S. Tremaine, of Buffalo, in which he quoted from various standard surgical works, and then remarked that but a faint light was thrown on the subject by the highest authorities. Among the circumstances which were to be taken into consideration in dealing with abdominal gun-shot wounds, were the calibre of the ball, the proximity of the weapon, and the direction of the entrance and exit of the missile. Among the symptoms of perforation of the intestines were prolonged shock, tympanites, severe pain, anxiety, and restlessness. Escape of blood from the anus, which the late Professor Gross regarded as of special significance, rarely occurred, but, when present, was of much diagnostic value.

He recommended laparotomy in wounds of the abdomen for the purpose of diagnosis, first, because the intestines might be injured; second, because, in nine cases out of ten, it was required for the removal of effused blood, which it was dangerous to allow to remain; third, because the abdominal section added but a very slight element of danger; and fourth, because by this means assurance could be given to the patient in many cases that the intestines were not wounded. Where there was positive evidence that the intestines were implicated, there was no question of the propriety of laparotomy.

The operation had been successfully performed in America in three cases in which there was intestinal perforation, two of them belonging to Dr. W. T. Bull, of New York, and the other to Dr. John B. Hamilton, of Washington. As to the time when laparotomy should be done, he thought it should be undertaken as soon as possible after the receipt of the injury, first, because the immediate shock paralyzed peristaltic action, and thus tended to prevent extravasation of fæces for a time; and, second, because delay increased the dangers of peritonitis. In consequence of the desirability of early operative interference, he advised, therefore, that physicians throughout the country

should familiarize themselves with the procedure by practising upon animals, so that they would be prepared to operate in cases of emergency.

In speaking of the technique, Dr. Tremaine particularly recommended the suture of Lembert, which was also advocated by the speakers who followed him. When the operation was completed, it was essential that a clean cavity should be left.

The first question,

WHAT ARE THE DIAGNOSTIC SIGNS OF THE INVOLVEMENT OF THE INTESTINES IN SHOT-WOUNDS OF THE ABDOMEN?

was discussed by DR. JOSEPH D. BRYANT, of New York. He said that there were two classes of symptoms: one referable to the abdomen itself, and one to the constitutional effects of the injury. In studying the local evidences of trouble, the surgeon would investigate the wound of the abdominal wall, the direction of the missile, the character of the discharges, and the presence or absence of emphysema of the borders of the wound, or in the neighboring connective tissue. If the direction of the ball indicated that the peritoneal cavity was penetrated, the presumption was that the intestines were wounded. Still, there were cases on record in which the cavity had been penetrated, and yet the intestines remained uninjured.

If the bleeding points in the abdominal wall would not account for the amount of hæmorrhage present in any case, it was altogether likely that the intestines were perforated. The same was true if there was bloody urine. Of course, the escape of the intestinal contents was proof positive of perforation, but this was rarely met with soon after the injury. Emphysema was not very frequently seen, but when present, it was almost invariably due to the escape of gas from the intestines. Early emphysema of the abdominal wall had been regarded as a positive sign of intestinal perforation, but while this is true, as a general rule, he had personally met with two instances in which the emphysema was caused by the suction of the abdominal muscles. If decomposition were present, emphysema might also occur without rupture of the intestines, but this was apt to be met with only quite late.

Having referred to pain, tympanites, bloody stools, and retention as significant signs, he went on to speak of hepatic resonance. While this was almost pathognomonic, it was to be borne in mind that it might possibly be due to other causes. Thus, it might result from the transverse colon getting between the liver and the abdominal wall, or from the tilting of the liver out of its normal position. There might be shock and nausea and vomiting, hiccough usually following the latter. If there was severe shock from the first, it usually indicated intestinal perforation and hæmorrhage. Extreme thirst, restlessness, anxiety, and subnormal rectal temperature were all corroborative signs of perforation. There were, indeed, but very few positive early indications of the condition, but loss of hepatic dulness, unless previously modified by change of position, or abnormal processes in the liver, was undoubtedly one of the most valuable.

WHAT SHOULD BE THE FIRST MEASURES OF TREATMENT IN SHOT-WOUNDS OF THE ABDOMEN INVOLVING THE INTESTINES?

was to have been discussed by DR. E. M. MOORE, JR., but he was not able to be present. It was taken up, however, by some of the other speakers.

DR. W. T. BULL, of New York, spoke on the third question,

UNDER WHAT CIRCUMSTANCES, AND HOW SOON AFTER THE INJURY SHOULD LAPAROTOMY BE RESORTED TO IN CASES OF SHOT-WOUNDS OF THE INTESTINES, AND WHEN IS THE OPERATION CONTRA-INDICATED?

He said that laparotomy was in general indicated, in the first place, for diagnosis. Many cases presented but few of the characteristic symptoms of perforation. Again, a bullet which had entered the peritoneal cavity was much more apt to have injured the gut than not. As to the time when laparotomy should be performed, he thought it should be done as soon as the immediate shock of the injury and of the removal of the patient were past. Delay only invited the onset of septicæmia, and he did not think it advisable to wait for the appearance of symptoms. Exploratory laparotomy was not without good effect even in non-penetrating wounds.

Since the year 1877 he had seen eight cases of penetrating shot-wounds of the abdomen, at the Chambers Street Hospital, New York. Five of these were treated on the expectant plan, and all proved fatal. In the other three cases laparotomy was resorted to, with the result of two recoveries and one death. In the first of the successful ones which had been reported in full in 1884, seven wounds of the intestines were sutured. The second occurred in August, 1886, and had recently been reported by Dr. Bull, at a meeting of the New York Surgical Society. The patient was twenty-five years of age, and the operation was performed two hours after the receipt of the injury. Three wounds of the intestines were sutured, and two wounds of the mesocolon were not sutured but rubbed thoroughly with iodoform. One of the appendices epiploicæ, of good size, which was found torn and bleeding at its extremity, was tied at its base with catgut and cut off. The external wound did not heal entirely for eight weeks, as there was sloughing of the peritoneum along the line of sutures, and protrusion of a portion of intestine which firmly adhered to the parieties. The edges of the wound were held together with two "relaxation sutures" of silver wire, and compression was made on the intestine with a small pad of iodoform gauze and wool. By means of these the gut was pushed back from day to day, while the edges were being drawn together and the lower part of the wound was filling with granulations. The man was now perfectly well and pursuing his usual avocations.

The third and unsuccessful case was operated on November 6, 1886, and had not as yet been reported. The wound was made by a forty-four calibre ball. The incision was made in the median line, and four perforations of the intestines were sutured. The operation lasted one and three-quarters hours, and death, which was probably due to the shock from the laparotomy, occurred eight hours afterward.

Dr. Bull explained that none of these three cases presented any positive proof of perforation of the intestines before the abdomen was opened. Yet the lesions found in the last one, as well as in the others, indicated operative interference. Having briefly referred to the five fatal cases treated on the expectant

plan, he went on to speak of the contra-indications for laparotomy. It was to be borne in mind, he said, that in many instances the solid organs, such as the liver, spleen, and kidneys — though the latter did not present so serious a complication as the others — were wounded as well as the intestines; and he doubted the ability of the surgeon to cope successfully with such cases. Uncomplicated wounds of the intestines were not, in his experience, accompanied by profound shock; and profound shock was, therefore, a decided contra-indication. The exposure and handling of the viscera were not devoid of danger. Peritonitis was not in his opinion necessarily a contra-indication.

As to what should be the first measures of treatment, he advised that the bullet wound should first of all be explored; except in cases where it was situated posteriorly, with no wound in front. In general, the two rules which he would offer for guidance were: (1) Assure yourself by exploration that the abdominal cavity has been entered. (2) Proceed to repair the injury.

Dr. Theodore R. Varich, of Jersey City, said that when there were present shock with gradually increasing exhaustion, sinking temperature, dulness on percussion of the dependent parts of the abdomen, and tympanites of the anterior portions, immediate laparotomy was demanded. The day of expectancy was past, and he thought that the surgeon should give his patient the chance offered by operation, however small it might be, as against the otherwise certain prospect of death.

Dr. Charles B. Nancrede, of Philadelphia, said that laparotomy should always be performed except when certain contra-indications were present. Among the indications referred to were the vomiting of blood or passage of blood per anum, the rapid accumulation of fluids in the abdomen, etc. As to the time for the operation, he thought it should be done just as soon as the patient's condition would warrant the performance of a long operation attended with shock, and the proper assistants and surroundings could be secured. When much hæmorrhage was probably taking place, however, it should be done earlier than otherwise.

Among the contra-indications were profound shock, unless this was due to hæmorrhage. He thought that by no means every physician was competent to perform laparotomy, and that as a rule, cases would do better if left to nature than if operated on by an incompetent surgeon. Experience was a prerequisite in this procedure; and, if possible, only one pair of hands should be allowed to enter the abdominal cavity. Acute peritonitis or wounds of other organs besides the intestines he thought might prove contra-indications.

The fourth question,

WHAT ARE THE ESSENTIAL FEATURES OF THE TECHNIQUE OF LAPAROTOMY, INCLUDING THE MANAGEMENT OF THE WOUNDED INTESTINE?

was discussed by Dr. John B. Hamilton, of Washington. By way of preliminary he said that he thought the first thing to do in small pistol wounds was to use the probe; the instrument which he preferred being the flexible spiral probe of Nelaton. If the cavity of the abdomen was found to be penetrated laparotomy was indicated. Even if there were great shock exploratory laparotomy was indicated, as this was probably due to the wounding of a vessel, nerve or ganglion.

As to the technique of laparotomy in cases of this kind it did not differ from that of ordinary laparotomy, except as regards the treatment of the intestines. Strict antiseptic precautions should be employed, and towels wrung out of hot water should be laid on the abdomen. On opening the cavity a careful inspection should be made for bleeding vessels; and no abrasion should be left untouched. The intestines should be drawn up loop by loop by the fingers, and allowed to remain, a towel wrung out with hot bichloride solution; another towel being placed over them. It was necessary to reduce pouting mucous membrane. He used the Lambert suture, and preferred catgut for the purpose. The incision, he said in conclusion, should be closed as in other cases of laparotomy, after the cavity had been thoroughly cleansed.

The fifth question,

WHAT ARE THE BEST METHODS OF AFTER-TREATMENT IN CASES OF SHOT-WOUNDS REQUIRING LAPAROTOMY AND SUTURE OF THE INTESTINES?

was discussed by Dr. Nancrede.

Dr. Charles T. Parkes went rapidly over all the various points of the discussion. He said that if the abdominal cavity was penetrated, it might be considered certain that the intestines were perforated, and the surgeon should be deterred only on the strongest grounds from operating. Deep-seated emphysematous crackling he considers a valuable sign of perforation, when present. In discussing the second question he said that the first thing to do was to ascertain whether the wound entered the abdominal cavity; and he spoke particularly of the dangers associated with removal of the patient. As to the third question, under what circumstances laparotomy should be performed, he said, under all circumstances, unless the patient seemed likely to die during the operation. Complications of other organs were also contra-indications. As to the time for the operation, it should be performed just as soon as the surgeon's preparations could be made for it.

In the methods of procedure, he said, we should be guided by the same rules as in all grave surgical injuries. If perforation was present, there was no contra-indication to operating; and it was impossible to say whether a case was likely to be a fatal one or not until after exploratory laparotomy had been performed. In speaking of the technique of the operation he said that the median line was the only one for incision, and that he considered this a very important point. The first incision should be free, and the cavity having been opened, all bleeding vessels should be secured. Then all the small incisions should be drawn up through the incision, and wrapped in warm towels. Wounds in the large intestines and other viscera should be looked for. The whole of the small intestines should be passed through the fingers and carefully examined. In speaking of the treatment of intestinal perforations, he said that he thought Lembert's suture the best, and that a double row of sutures was entirely unnecessary. He employed a small round needle either straight or curved, and the material which he used for sutures was pure silk. Total resection of the gut was sometimes necessary. Finally, the abdomen should be closed in the ordinary way; care being always taken to avoid ventral hernia.

In the after-treatment, Dr. Parkes said, it was necessary that the patient should have complete rest.

Opium was required in sufficient quantities to secure this; and rectal alimentation was sometimes of service. If the temperature ran high, cold external applications were to be used; but if it did not rise above 101°, there was no necessity for interference.

OFFICERS ELECTED.

President, Dr. Isaac E. Taylor, of New York. *Vice-Presidents*, 1st District, Dr. Dodge, of Rouse's Point; 2d District, Dr. Sherer, of Waterford; 3d District, Dr. G. W. Avery, of Norwich; 4th District, Dr. Colvin, of Clyde. *Secretary*, Dr. E. D. Ferguson, of Troy. *Treasurer*, Dr. J. H. Hustin, of New York. *Director of the Library*, Dr. J. W. S. Gouley, of New York.

Time of meeting next year, Second Tuesday in October.

Recent Literature.

Insanity and its Treatment, Lectures on the Treatment, Medical and Legal, of Insane Patients. By G. FIELDING BLANDFORD, M.D., Oxon, etc. Third edition. Together with "Types of Insanity," an Illustrated Guide in the Physical Diagnosis of Mental Disease, by Allan McLean Hamilton, M.D. pp. 379. New York: William Wood & Co. 1886.

These productions together form a volume of Wood's Library of Standard Medical Authors. The third edition of Blandford's lectures, of which the bulk of the book is composed, diminishes in no essential respect its prestige as a practical manual for instruction. Its merits are simplicity of method, clearness of expression, brevity and compactness of matter and an even treatment of the various parts. The amount of space devoted to each subject is subordinated to its importance and value in practice, no impartiality being shown in this respect to any favorite line of inquiry. The classification followed is sufficiently accurate, and especially useful for purposes of instruction. Considering the purpose of the book there is little fault to be found with its completeness and scientific accuracy if we except the author's failure to accord any notice to paranoia or any of the recently established forms of primary insanity. Exception will also be taken by some to the writer's views as to "moral insanity" although they still have strong supporters. He also continues to hold chloral in high favor as a hypnotic in insanity, in spite of the decided and general belief to the contrary among alienists. Otherwise, the lectures are brought well up to date and may be said to remain in the van of English works on insanity designed for students and the general medical reader.

Hamilton's "Types of Insanity" a monograph of about fifty pages completes the volume. The presence of the illustrations is not easy to account for on the grounds of usefulness, and we must confess to an inability to rightly name by the likenesses several of the "types" represented in the plates. To us they illustrate only the futility of attempting to classify forms of insanity by the facial expression. The text, however, is a useful addition in a medico-legal way, a graphic description of the general appearance of an insane patient being not unfrequently the most effective part of expert evidence. A serviceable abstract of the laws of the various States on the commitment of the insane, also by Dr. Hamilton, is appended.

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BRAIN SURGERY AGAIN.

NEARLY two years ago, we dwelt at considerable length in these columns [1] upon an operation for the removal of a tumor in the motor cortex of the brain, performed by Mr. Godlee, of London. As our readers may remember, the patient was in a fair way to recover when he succumbed to a secondary meningitis. Although a failure, the promise of that and other more successful operations incited other surgeons to similar operations with greater precautions and with better results, so that now brain surgery seems likely to become as well recognized a branch of the surgeon's art, within its limitations, as abdominal surgery. The existence of brain surgery, however, necessarily had to be secondary to the study of the localization of cerebral disease. It is needless now to say that, with the exception of the centres for speech, there is no fact in cerebral localization more firmly established than the existence of the various motor centres in the cortex of the central convolutions of the brain. The experiments of Ferrier, Fritsch, Hitzig, and others upon animals, in the sixteen years since they were first published, have been confirmed in regard to man by scores of autopsies.

Since the many experiments on animals have shown that the cranial cavity can be opened without fatal results, the old operation of trephining for epilepsy, which had fallen into abeyance, has been revived. Dr. C. F. MacDonald reports [2] two cases of trephining for traumatic epilepsy, in both of which there was a depression of the skull; these recovered, and some months later there had been no return of the fits. The mental impairment had become quite marked, and, although there was a gain in self-control, the dementia, of course, was not cured. As both these patients were criminals, the cases are suggestive to those who believe that crime is but one manifestation of mental disease.

Others, however, have trephined in cases of cere-

[1] Vol. CXII., 41, 67.
[2] "Report of Two Successful Cases of Trephining for Traumatic Epilepsy." Journal of Nervous and Mental Disease, August, 1886.

bral disease without visible depression, or even injury, being guided by the results of the topical diagnosis of the lesion. Mr. W. B. Mackay reports two cases of this sort:[3] one of right hemiplegia and aphasia from suppurating periostitis, where he trephined and found pus, but in this the patient died; the other a case of paralysis of the right leg, with exaggerated patellar reflex, due to a blow on the skull. In this case the patient recovered, and had good use of the leg. The most brilliant results, however, are those reported to the British Medical Association this summer by Mr. Victor Horsley.[4] In four cases of monoplegia, with epileptiform attacks beginning in the paralyzed limb, where the trouble was due to a tumor, or to some old cicatrix involving the meninges and the cortex of the brain, he has localized the seat of the trouble, trephined over it, cut out the cicatrix or tumor, with the portion of healthy cortex surrounding it: in every case the patient has recovered, and, although still paralytic, has remained free from the attacks. Furthermore, he suggests the propriety of excising the epileptogenous focus in cases of idiopathic epilepsy, where the discharge begins in some definite centre. We must refer to Mr. Horsley's paper for the details of his method of operation; we know not whether to admire most his exactness in localization or his skill in operation.

Considering the experimental data upon which cerebral localization is based, and noting Mr. Horsley's assertion: "I am one of those who do not consider it justifiable to try an experiment on man before I have found it to be harmless in the lower animals," and also his statement as to the information such experiments gave him in judging as to healthy and diseased parts of the living brain, it would seem as if the anti-vivisectionists ought to be convinced that experiments on living animals did some good. We will venture to say that Mr. Horsley's patients believe so. There is no process of reasoning, however, that could convince the poor woman who was peddling her tracts the other day about our streets, that our houses are not honeycombed, and our best citizens are not poisoned by the agents of the Czar of Russia; and all the results obtained from vivisection, from the days of Democritus, of Abdera, to the days of Mr. Horsley's operation, would fail to convince a class of self-styled philanthropists of which the editor of the *London Spectator* and Miss Frances Power Cobbe are types, that the slightest benefit could ever accrue to humanity from experimentation on living animals.

ARE ALL VENEREAL PATIENTS LIARS?

Physicians who like to be epigrammatic even at the expense of exact truth sometimes say that one of the first symptoms of syphilis is an unusual readiness in lying, and it seems to be a very wide-spread belief that it is impossible for a patient afflicted with venereal disease to tell the truth.

Whenever any difficulty arises in reconciling the statement of the patient with the physician's theory of the lesions presented, it is very easy to settle the matter by saying that venereal patients are never to be believed.

It is very certain that very great temptations to deceive are sometimes presented to this class of patients and that some of them go to absurd lengths of mendacity in their desire to conceal the cause of their troubles, but the question arises whether physicians do not carry their unbelief to an extent even more absurd. In our desire to escape imposition do we not refuse credence to patients who would be granted ready belief in other matters? Do we not require of venereal patients more accurate pathology and more careful observation than of others? In weighing the words of the patient do we give full force to the many things which may deceive the doctor?

One cannot rashly accuse of intentional dishonesty the man who so incriminates himself that he has no motive left for concealment, nor the man whose word the doctor is in the habit of accepting in the business affairs of life, nor the doctor who comes as a patient to consult as to his own case which he cannot understand. Anomalies constantly occur which do not conform with our preconceived ideas, consequently we too easily believe the patient's story to be untrue.

It is not without interest and instruction to notice some of the things that tend to make a diagnosis without the history difficult if not impossible. The initial lesion of syphilis may be counterfeited in many ways: Among other ways, a recurring induration may show itself months afterwards at the site it originally occupied, but from which it had disappeared. An ulcerating gumma may approach the initial sore most closely in appearance. Cornil mentions a series of mucous patches, existing simultaneously with a secondary eruption, which had an indurated base so that it was impossible to recognize them from primary sores without reference to the concomitant lesions on other parts of the body. Any of these appearances seen for the first time might puzzle the physician in his attempt to properly connect the lesion and the history.

Various non-syphilitic lesions may be referred by the physicians to a contagion which the patient denies. Mauriac describes an idiopathic induration of the glans, and also what he terms anthracoïde of the glans, either of which might suggest a primary sore. Greenough gives the history of an herpetic ulceration that from its position at the edge of the prepuce became inflamed and indurated in such a fashion that a specialist if he had seen it without knowing the history would certainly have called it an initial lesion of syphilis.

The inability of patients to tell when they had syphilis, or whether they ever had it at all, is taken as an evidence of the total depravity which attends the disease. The ease with which the disease may remain undiscovered by the bearer of it is hardly credible

[3] "Trephining over the Motor Areas of the Brain." Edinburgh Medical Journal, July, 1886.
[4] "Brain Surgery." British Medical Journal, October 9, 1886.

until one has had experience with it. Its peculiarity of painlessness in its early manifestations, outside of the neuralgic pains which are often wanting, renders it a not infrequent occurrence that the eruptions are first discovered by the doctor when consulted for some other trouble. Such patients are perfectly frank in remembering a gonorrhœa simply because it is more painful, requires more care to avoid exposure, and really occasions more discomfort. It is not infrequent that a gonorrhœa masks the symptoms of an accompanying syphilis, for the patient refers the slight sore and the glands in the groin to the already existing urethritis, and he is always positive in his assertions that he has never had syphilis, and it is very true that he has never had anything that he has known as syphilis.

The many non-venereal ways in which syphilis may be communicated and the frequency of such an occurrence account for many of the irregular histories with which patients regale us. There is another possibility to be considered also in some of the anomalous cases in which patients deny antecedents; late hereditary syphilis is assuming an importance never dreamed of until quite recently, and it is by no means impossible that heredity may account for late symptoms in some of the cases of unexplained origin.

Some of the most apparently shocking departures from the truth are committed in reference to gonorrhœa. The ease with which an urethra damaged by a previous inflammation will again take on inflammation is not always appreciated; the non-specific inflammations of the urethra we know little about, and the same is true of the cases of mediate contagion. Otis has established the fact so far as human testimony can establish it that the oft ridiculed infection from a water-closet may occur. One case occurred in the person of a physician who voluntarily went to Otis to narrate the fact. Of course the inference must always be against the claim of such an occurrence but its possibility cannot be denied.

The object of these remarks is by no means to induce physicians to give credence to every absurd story that is told them but rather to influence them to look upon the stories of venereal patients with the same judicial consideration with which they would regard the histories of other patients: not to favor indiscriminate credulity but to counteract a tendency to indiscriminate incredulity.

MIND-READING AND MUSCLE-READING.

DURING the past week the public has been treated to numerous accounts of how "his Imperial Majesty, Alexander the Third, Czar of all the Russias," has been astonished at the marvellous power of mind-reading possessed by Mr. Washington Irving Bishop, who is now with us. From a circular, we learn that nearly all the crowned heads of Europe have likewise succumbed and have become earnest believers, and now the lesser American lights are to be treated to an exhibition of the marvellous. As preliminary to Mr. Bishop's great public exhibition and his "farewell reception *extraordinaire*," a private performance was given at a hotel last week, to which a number of people were invited.

In thinking of this preliminary entertainment, one knows not at first whether to laugh or to be angry — to laugh at the credulity of human nature in general, and the facile manner in which even the most skeptical are manipulated and exhibited, in spite of themselves, as advertisements for Mr. Bishop and his subsequent exhibition, or to become angry at the masterly impudence of the performer in palming off an exhibition of so shallow a character as one of true mind-reading. There certainly is a humorous side to the matter, which even the most disappointed can enjoy. It is fortunate for Mr. Bishop that he comes at a time when "thought transference" has become the subject of true scientific investigation, and as such, is occupying the attention of those interested in that class of subjects. In consequence of this, he has found a number, who, from real scientific interest, were ready to meet him and witness his experiments, in the hope that he might have something which would throw some light on this question. That this last might be the case many were led to believe from the public statements, assertions, and boasts which Mr. Bishop, with considerable adroitness, has caused to be distributed through the daily press and by circulars.

We were led to believe, for example, that in the final and culminating experiment, the "mind-reader" would drive through the streets blindfolded, and attached only by a slack wire to the wrist of his conductor. Without any other assistance or communication, the public was led to believe that Mr. Bishop would find a hidden object. Judge then of the surprise of the audience at seeing the modern Jason, after getting into the carriage, deliberately place the hand of one of the committee on the back of his (Bishop's) head and take the hand of another in his own, and in this attitude slowly drive off. The further history of the wire is lost with that of the owl. Whether or not Mr. Bishop continued to remain blindfolded after leaving the Vendome, no one but Mr. Bishop himself knows. We can however, say, that during nearly the whole drive, he was in contact with one of his conductors, and after he entered the house where the article was hidden he held the hand of one with the persistence of a drowning man clutching a straw. It may not be superfluous to add, that before leaving the hotel, Mr. Bishop took the unnecessary and not-advertized precaution to localize the general situation of the house on a map, perhaps that he might not get lost in our new park; and further, Mr. Bishop did not follow the route which was in the mind of the committee, though it was the said mind he claimed to be reading. The other experiments were all performed in the same way. The advertised conditions under which they were performed were about equally fulfilled.

It is hardly worth while to discuss the fallacy of the experiments as tests of the power of thought-reading. To medical men they are obvious enough. If Mr. Bishop had performed a single experiment without being in contact with his subject, there might be some reason to suppose he possessed the power of mind-reading. Or even granting the necessity, for some unexplained reason, of touching the subject; if "mind-readers" when searching for hidden objects would hold the subject's hand but sit still, and give up the peripatetic habit of wandering round the room, or streets of the city, in such intimate company with the subject, something like evidence of mind-reading would be shown. Or if they would read the numbers of bank notes or anything else without a black-board or pencil and paper, or other such accessories, their experiments would be worth serious consideration. Under these conditions we could even forgive the clap-trap methods employed to impress audiences and the atmosphere of charlatanism with which they usually surround themselves. But, unfortunately, we fear that no one understands the childishness of these performances, so far as concerns thought-reading, better than the "mind-reader" himself. As exhibitions of the high degree to which muscle-reading can be developed, Mr. Bishop's performances are interesting. But we venture to say that muscle-reading is not as difficult as is generally taken for granted. We have reason to believe, that, with a little practice, nine persons out of ten could do most of the things performed by "mind-readers," even if not with the same facility as a professional with many years' practice. The Society for Psychical Research has invited Mr. Bishop to appear before it, and give genuine proofs of "mind-reading." It is understood that he has accepted. We trust that their waiting will not be a long and weary one.

MEDICAL NOTES.

— Dr. J. Solis Cohen has noticed a peculiar perversion of the temperature sense of the tongue and oral cavity, caused by strong solutions of cocaine. While still capable of appreciating heat, the patient cannot recognize cold, and iced water seems of blood heat, or even warmer.

BOSTON.

— The late Dr. Luther Parks, whose death was recently reported from Pau, France, was at one time editor of this JOURNAL. For the last twenty years he had resided abroad.

— The following circular was posted on the closed doors of many of the drug stores in Boston, Sunday, the 28th inst: To the Members of the Boston Druggists' Association — Gentlemen: At a meeting of the Boston Druggists' Association, held at the Revere House, Tuesday evening, November 23, a committee with full powers was appointed to take into consideration the recent action of the Boston Police Commissioners in closing drug stores on the Lord's day, and to make such recommendations as they thought best. In the performance of this duty, the Committee met at the Revere House on the 24th, and respectfully submits the following statement and recommendations:

In the first place, your Committee cannot see why the retail druggists should be among the first selected for the enforcement of the Sunday law. It is well known that the barbers were ordered to close their shops because a majority of them had petitioned for the enforcement of the law. It is hard to understand why the greatest law breakers are not noticed in this Sunday enforcement act, particularly those that have no claim whatever to works of necessity or charity, but do Sunday work simply because it can be done more cheaply. We refer more particularly to railroad companies, who lay tracks, build bridges, advertise excursions, run trains day and night; livery stable keepers, whose business is largely for pleasure; telegraph and telephone companies, who make repairs because they can be done more convenient than on week days; newspaper companies, who print, sell, and distribute their largest editions on Sunday; milk peddlers, and others.

We are well aware that it is no excuse for one violater of the law to quote another, but we have a right to expect that the strong arm of the Boston police would first grapple with the most flagrant violaters of the law, rather than with those that administer to the wants of the poor and sick. We can say with truth and sincerity that no class of men would be more delighted to close their places of business on Sunday, or shorten their hours of work on week days, than the druggists; and that there are no more law-abiding citizens, as the records of the courts will show. We believe it unwise on the part of the Police Commissioners to select the druggists of Boston on whom to enforce a law that has been obsolete for half a century, and especially when it was not attempted in any other part of the State.

If people will not call physicians on Sunday, and doctors will not visit or prescribe for their patients; if accidents will not happen; if children are not born; if people never forget to obtain their medicines on Saturday; if no one dies on the Sabbath; and if the poor will pay doctors to provide all the medicines they desire, then the Sunday law can be enforced to the letter (so far as relates to the drug trade).

The Police Commissioners are not the law-makers, and cannot grant any privileges, or define what kind of business may be carried on, or what goods may be sold, but must enforce the law in full, or not at all; therefore, there is no safety or propriety in doing any business on the Lord's day. If the wants of the public can be met within the six days' limit, as in other trades or professions, no one will be better pleased than the retail druggists. This is for the public to determine, and we must await their decision, which, in a matter of this importance, will not be long in coming.

In view of these facts, we recommend that druggists

close their stores, and do no business whatever on the Lord's day.

Per order of Committee,
BOSTON DRUGGISTS' ASSOCIATION.

NEW YORK.

— A new medical charity has been organized in the northeastern part of the city to be known as the Yorkville Dispensary and Hospital for Women and Children. A number of physicians living in the neighborhood are among its trustees, and articles of incorporation have been secured for it.

— The anniversary exercises of the Brooklyn Home for Consumptives were held in the church corner of Clinton and Pierrepont Streets, on the evening of November 22d, when Gen. A. C. Barnes presided, and the occasion was made as attractive as possible by addresses by the Rev. Henry Ward Beecher and ex-Mayor Seth Low, by vocal and instrumental music, and by an original poem written for the occasion by Will Carleton.

— The Thirty-Fourth Annual Meeting of the Children's Aid Society was held November 23d, when the President, Mr. William A. Booth, who has held the position for twenty-five years, was again re-elected. It was reported that for the Sick Children's Mission last winter $1,096 was spent. The Flower Mission distributed 115,000 bouquets, 3,000 cuttings, and 150 growing plants. The Summer Home, at Bath, Long Island, entertained during the season, 4,432 children. The Sanitarian at Coney Island, although much pressed for funds, took care of 1,048 infants and 635 mothers, and gave a day's entertainment to 2,648 additional mothers and children.

— The Association for the Advancement of Physical Culture held its second annual meeting at the Adelphi Academy, Brooklyn, November 26th. The President, Dr. Edward Hitchcock, read a paper on "The Need of Anthropometry in Physical Training," and a number of other papers were read and discussed. The German system of training teachers, now employed at the Milwaukee Normal School was also explained; after which there were exhibitions of gymnastics by a class from the Turnvereins of New York and Brooklyn, a class of ladies from the Brooklyn Normal School for Physical Training, and a class of boys from the Adelphi Academy. Dr. Hitchcock was again elected President.

— The first meeting of the Guild of St. Luke in this county was held at Calvary Church, November 19th. The charter has been received from the parent Guild, which was organized in England in 1864, and now maintains a hospital and efficient ambulance service in London. Its members are made up of clergymen of the Church of England, and students and practitioners who are communicants of the Church. The officers of the American Guild are, Provost, W. Thornton Parker, M.D., of Newport, R. I.; Vice-Provost, George H. Cleveland, M.D., of Pent Water, Mich.; Warden, Rev. George J. Magill, of Newport, R.I.; Treasurer, Rev. W. F. Morrison, Chaplain United States Navy. At the meeting of the Council, composed of these officers it was voted to appoint a medical missionary to be under the charge of the Bishop of Shanghai, China, and that the Provost should be empowered to appoint a corresponding secretary in every medical college in the United States. At the public meeting addresses were made by Bishop Quintard, of Tennessee, and the Provost, Dr. Parker.

— The Society of the Alumni of the University of Pennsylvania was organized at a subscription dinner given at Delmonico's, November 23d. Dr. Meredith Clymer presided, and the Provost of the University, Dr. William Pepper, Prof. Joseph Leidy, of the Medical Department, Prof. G. E. Bispham, of the Law Department, and Judge Henry Reid came on from Philadelphia expressly for the occasion. The speech of the evening was made by Dr. Pepper, who sketched the growth of the University for the past twenty-five years. Six new departments had been added, four within the last six years, and all are in active and successful operation. Twenty-five years ago there was barely 500 students, and of these 300 were in the Medical Department, which then had a non-graded course of two years' duration. At the present time there were 1,100 students, of which 400 were in the Medical Department. The standard of education had been greatly advanced in all the departments, and especially the medical, in which the examinations were made more rigid and the entire course more extended. The teaching force had been increased 25 to 146, and the literary productions of the institutions had increased in an even greater proportion. The last annual report gave a list of publications of the different Faculties, embracing 74 authors and 641 titles, including a considerable number of large and important works. The cramped accommodations of former days had been exchanged for spacious and elegant ones, and the buildings erected within the past fifteen years had cost upward of $1,000,000. The officers of the New York Society elected were, *President*, E. R. Robinson, Esq.; *Secretary*, Dr. E. C. Vidal; *Executive Committee*, Drs. Meredith Clymer, Alexander B. Mott and C. C. Lee, the Rev. Arthur Ritchie, and Col. Wm. McMichael.

Miscellany.

THE CAUSE OF CIRCULAR GASTRIC ULCER.

DR. SILBERMANN, of Breslau, has, we learn from the *Lancet*, lately made some experiments on dogs for the purpose of showing that the kind of anæmia characterized by deficiency of hæmoglobin in the red corpuscles of the blood is peculiarly favorable to the production and maintenance of circular ulcers of the stomach. Hæmoglobinæmia was produced by injection of various substances, and then either chromate of lead was introduced into a small gastric artery, or a ligature was applied to it, or the internal surface of the stomach was abraded by means of an œsophageal sound carrying a guarded point. All these animals

were found to have contracted gastric ulcers, and it appeared to make no difference whether the hæmoglobinæmia was produced before or after the stomach was injured. With the microscope it was found that a number of the red corpuscles were of a very pale color, and that the blood was less alkaline than normal, which is explained by the experiments of Preyer, A. Schmidt, and Rollet, who have shown that hæmoglobin is a weak acid. Dr. Silbermann considers that in the anæmia of hæmoglobinæmia all the conditions are present which are required by various theories for the production of gastric ulcer — namely, arterial anæmia (Klebs), venous hyperæmia of the gastric mucosa (Key), venous stasis in the hepatic vessels (Gunsberg), circumscribed hæmorrhages (Virchow), and, lastly, diminished alkalinity of the blood (Leube).

BLOWING UP THE COLON OR THE OPERATOR.

X ROADS, Nov. 29th, 1886.

MR. EDITOR,—I was much interested in the simple expedient recorded in your recent issue, for blowing up the colon with a tube in the mouth of the operator, the other extremity being inserted in the patient.

In reporting progress let me say that my teacher, Dr. Naso, having occasion to avail himself of this simple expedient at a farm-house ingeniously substituted for the rubber-tube a simple goosequill, the end of which was left protruding. He had no sooner adjusted himself at the orifice of this little tube than the patient sneezed, the result of which was, that instead of blowing up the colon, my teacher was most unexpectedly inflated by it.

It should be added, in justice to a great man, that he immediately recovered himself, and indignantly blew up the bystanders. But ought we not to be more careful?

Very respectfully yours, TYRO.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 20, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. and Croup.
New York	1,439,039	683	289	23.70	16.35	5.40	11.25	3.15
Philadelphia	971,363	360	145	15.40	14.28	—	8.40	2.80
Brooklyn	690,000	303	109	24.09	14.85	.66	10.56	1.32
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	145	43	9.66	20.00	1.38	4.83	2.76
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	143	50	22.40	16.10	—	11.90	2.10
Cincinnati	325,000	140	70	35.50	7.81	6.39	12.78	8.52
New Orleans	238,000	112	38	17.80	11.57	—	2.67	10.68
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	78	26	11.52	28.16	—	5.12	2.56
Pittsburgh	190,000	92	45	31.61	11.99	15.26	9.81	1.09
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	25	8	24.00	24.00	8.00	8.00	4.00
Charleston	60,145	26	10	15.40	3.85	—	3.85	7.70
Worcester	68,383	16	7	6.25	18.75	—	6.25	—
Lowell	64,051	20	8	20.00	20.00	—	15.00	—
Cambridge	59,660	19	5	21.04	26.30	—	15.78	—
Fall River	56,863	—	—	—	—	—	—	—
Lynn	45,861	13	3	—	38.45	—	—	—
Lawrence	38,825	7	2	14.28	14.28	—	—	—
Springfield	37,577	—	—	—	—	—	—	—
New Bedford	33,393	14	5	7.14	14.28	—	7.14	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	7	1	14.28	42.84	—	14.28	—
Holyoke	27,894	7	2	14.28	28.56	—	14.28	—
Chelsea	25,709	6	2	—	16.66	—	—	—
Taunton	23,674	7	1	14.24	42.84	—	—	14.28
Haverhill	21,795	11	4	45.45	9.09	—	36.36	—
Gloucester	21,713	0	0	—	—	—	—	—
Brockton	20,783	5	1	—	20.00	—	—	—
Newton	19,759	4	0	—	—	—	—	—
Malden	16,407	8	3	25.00	12.50	—	12.50	—
Fitchburg	15,375	6	—	50.00	16.66	—	33.33	—
Waltham	14,609	3	1	33.33	—	—	—	—
Newburyport	13,716	6	3	—	—	—	—	—
Northampton	12,896	—	—	—	—	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,276: under five years of age 881: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 475, consumption 353, lung diseases 277, diphtheria and croup 214, diarrhœal diseases 73, measles 68, typhoid fever 51, malarial fever 23, scarlet fever 22, whooping-cough 15, cerebro-spinal meningitis six, erysipelas three. From typhoid fever, Brooklyn 11, Philadelphia nine, New York and Baltimore eight each, Cincinnati four, District of Columbia three, Pittsburgh, Lowell, Cambridge, Lawrence, Haverhill, Malden, Fitchburg and Waltham one each. From malarial fevers, Brooklyn 13, New Orleans four, New York three, Philadelphia two, Baltimore one. From scarlet fever, New York six, Cincinnati four, Philadelphia and Pittsburgh three each, Brooklyn and Baltimore two each, Boston and Nashville one each. From whooping-cough Brooklyn six, New York three, Cincinnati two, Philadelphia, Baltimore, New Orleans and Charleston one each. From cerebro-spinal meningitis, New York five, Cincinnati one. From erysipelas, New York two, Pittsburgh one.

In the 21 cities and greater towns of Massachusetts, with a population of 959,810 (population of the State 1,941,465), the total death-rate for the week was 16.64 against 19.33 and 19.80 for the two preceding weeks.

For the week ending October 23d, in the Swiss towns, there were 21 deaths from consumption, diarrhœal diseases 18, lung diseases 13, whooping-cough six, typhoid fever four, diphtheria and croup two, erysipelas one.

The death-rates were: at Zurich 7.6; Geneva 15.1; Basle 11.8; Berne 20.3.

For the week ending November 6th, in the Swiss towns, there were 28 deaths from consumption, diarrhœal diseases 16, lung diseases 12, diphtheria and croup three, whooping-cough three, typhoid fever two.

The death-rates were at Zurich 19.1; Geneva 13.1; Basle 22.2; Berne 23.5.

The meteorological record for the week ending November 20, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Nov. 20, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday,...14	29.727	33.7	38.2	28.6	72.0	58.0	54.0	61.3	N.W.	N.W.	W.	28	28	12	F.	C.	C.	—	—
Monday,... 15	30.043	40.6	46.0	33.1	74.0	62.0	59.0	65.0	W.	W.	W.	17	19	8	C.	C.	O.	—	—
Tuesday,...16	30.391	35.4	41.3	31.2	51.0	34.0	40.0	41.7	N.W.	N.W.	. .	10	11	0	C.	F.	C.	—	—
Wednes... 17	30.277	39.1	46.2	32.5	56.0	97.0	100.0	84.3	S.	W.	N.W.	3	2	3	O.	R.	O.	—	—
Thursday, 18	29.624	55.9	66.1	36.9	86.0	89.0	53.0	76.0	S.W.	S.W.	W.	31	21	20	O.	R.	C.	—	—
Friday, ...19	29.730	37.4	42.0	35.0	62.0	57.0	54.0	57.7	S.W.	N.W.	W.	16	32	22	F.	C.	C.	—	—
Saturday, 20	29.792	42.0	48.2	33.7	80.0	41.0	47.0	56.0	W.	W.	W.	12	14	6	O.	F.	O.	.19½	0.62
Mean, the Week.	29.941	40.6	48.9	33.3				63.1											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 20, 1886, TO NOVEMBER 26, 1886.

IRWIN, B. J. D., lieutenant colonel and assistant medical purveyor. Relieved from temporary duty in New York City, and of the charge of the medical purveying depot in that city and ordered to San Francisco, Cal., to take charge of the medical purveying depot in that city. S. O. 270, A. G. O., November 19, 1886.

TOWN, F. L., major and surgeon. Ordered from Fort Clark, Tex., to Post of San Antonio, Tex., to relieve Surgeon J. P. Wright. S. O. 159, Department of Texas, November 15, 1886.

GIBSON, JOS. R., major and surgeon. Ordered for duty as post surgeon, Fort Lyon, Col. S. O. 134, Department of Missouri, November 20, 1886.

POWELL, J. L., captain and assistant surgeon. Ordered for duty as post surgeon, Fort Supply, Ind. Ter. S. O. 134, Department of Missouri, November 20, 1886.

WALKER, FREEMAN V., first lieutenant and assistant surgeon. Assigned to duty at Fort McIntosh, Tex. S. O. 159, Department of Texas, November 15, 1886.

CLENDENIN, PAUL, first lieutenant and assistant surgeon. Recently appointed. Ordered to report to commanding general Department of Texas for assignment to duty. S. O. 271, A. G. O., November 20, 1886.

JOHNSON, HENRY, captain and medical storekeeper, will in addition to his present duties, assume charge of the medical purveying depot in New York City as acting assistant medical purveyor. S. O. 270, A. G. O., November 19, 1886.

APPOINTMENTS.

MOORE, JOHN, lieutenant colonel and assistant medical purveyor. To be surgeon general of the army, November 18, 1886.

BALL, ROBERT R. To be assistant surgeon with the rank of first lieutenant, November 19, 1886.

PROMOTIONS.

BAILY, JOSEPH C., major and surgeon. To be assistant medical purveyor with the rank of lieutenant colonel, November 18, 1886.

HEIZMANN, CHAS. L., captain and assistant surgeon. To be surgeon with the rank of major, November 18, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING NOVEMBER 27, 1886.

LAW, HOMER, L., surgeon. Ordered before the Retiring Board, December 2, 1886.

LIPPINCOTT, GEORGE C., passed assistant surgeon. Ordered before the Retiring Board, December 6th, 1886.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting of the Boston Society for Medical Observation will be held at the Medical Library, 19 Boylston Place, on Monday evening, December 6, 1886. Readers: Dr. J. S. Greene, Dr. J. J. Putnam.

CHARLES P. STRONG, *Secretary*.

GYNÆCOLOGICAL SOCIETY OF BOSTON. — The next meeting of the Society will be held at the Medical Library Room, No. 19 Boylston Place, on Thursday, December 9th, at 4 o'clock, P.M. Paper: Dr. E. W. Cushing, "The Use of Irrigation in Gynæcology."

H. J. HARRIMAN, *Secretary*.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — THE SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE will meet at 19 Boylston Place, on Wednesday, December 8th, at 7.45 o'clock. Dr. Morton Prince will open the meeting with some remarks upon mind-reading and muscle-reading. Dr. H. C. Haven will present a paper on "A Plea for a more Careful Consideration of the Importance of the Methods and Manner of Infant Feeding."

ALBERT N. BLODGETT, M.D., *Secretary*.
F. I. KNIGHT, M.D., *Chairman*.

GRADUATES OF DARTMOUTH MEDICAL SCHOOL.

The following gentlemen, graduates of the Medical Department of Dartmouth College, received their degrees, Tuesday, Nov. 23d:

Edward Shaffer Ballou, Rhode Island; Elmer Ellsworth Barrett, New Hampshire; Frederick Lucien Brigham, Vermont; John Cochrane, M.D., Massachusetts; Frank Edgar Colby, New Hampshire; Eugene Buchanan Dunbar, New Hampshire; Clark Henry Eldridge, B.S., Ohio; James Pringle Elliott, New York; Edward Clayton Frost, Maine; Fred Wells Granger, A.B., Massachusetts; Edward Bangs Hallett, Jr., Massachusetts; Adrian Hazen Hoyt, New Hampshire; Frank Taylor Lougee, New Hampshire; Alexander Daniel McKillop, Massachusetts; Cyrus Truman Meaker, D.D.S., Pennsylvania; William Henry Presby, New Hampshire; Joel Wilson Scudder, Vermont; Maurice Francis Sullivan, Massachusetts; Walter Kendall Wadleigh, New Hampshire. Total, 19.

DEATH.

Died at Plympton, Mass., November 28, 1886, Josiah Sturtevant Hammond, M.D., M.M.S.S., aged seventy-six years.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Otological Society, Nineteenth Annual Meeting. Pequot House, New London, Conn., July 20, 1886. Vol. III., Part 5. New Bedford, Mass., 1886.

Fifth Biennial Report of the Kansas State Insane Asylum at Topeka, for the Biennial Period ending June 30, 1886. Kansas Publishing House: T. D. Thacher, Topeka, Kansas, 1886.

Certain Hereditary and Psychical Phenomena in Inebriety. By T. D. Crothers, M.D., Superintendent of Walnut Lodge, Hartford, Conn. St. Louis, 1886. (Reprint.)

Address in State Medicine delivered at the Thirty-Seventh Annual Session of the American Medical Association in St. Louis, May 6, 1886. By John H. Rauch, M.D., of Illinois. (Reprint.)

Transactions of the American Dermatological Association at the Tenth Annual Meeting held at Indian Harbor Hotel, Greenwich, Conn., on the 25th, 26th, and 27th of August, 1886. Official Report of the Proceedings by the Secretary, G. H. Tilden, A.B., M.D. Boston, 1886.

Lectures

ON THE HYGIENIC LAWS AND SANITARY CONDITIONS OF ANCIENT ROME.[1]

(1) Introduction. (2) Drainage. (3) Aqueducts. (4) Roads. (5) Cemeteries. (6) Cultivation. (7) Centres of Population. (8) Results under the Empire. Physicians. (9) Middle Ages. (10) Modern Discoveries about Malaria. (11) Attempts to Improve. Eucalyptus, etc.

BY PROF. RODOLFO LANCIANI, LL.D.,
Government Director of Archæological Researches at Rome.

After describing in my last lecture the humble origin of Rome, and the simple matter-of-fact causes which led to its foundation on the Palatine Hill; after showing by the evidence of history how wisely the place had been selected from a political and commercial point of view, we must inquire this evening whether the selection was equally happy, as regards the sanitary conditions of the district which surrounded the new town. The argument is full of practical interest, on account of the mighty struggle which we modern Romans have actually entered into against malaria, against a plague which seems to be spreading slowly, but surely; everywhere there is a superabundance of moisture, both in the air and in the land; in other words, which is invading one-fifth, at least, of the inhabited world.

The history of malaria in connection with Rome must be divided into five periods: the pre-historic, the republican, the imperial, the mediæval, and the modern, each one marking a distinct stage in the increase or in the decline of the plague, as well as a change in the means adopted by the inhabitants of the fever-stricken district to protect themselves from the evil.

As regards the pre-historic period, we lack, of course, positive evidence, because, when ancient writers speak of hygienic matters at the time Rome was founded, either they speak at random, or else they saw things as they appeared in their own age. It seems probable that, at that time, all the low-lands surrounding the Alban volcanoes, as, for instance, the Pomptine, the Volscian, and the Latin districts, were comparatively healthy, on account of the purifying action of telluric fires, of sulphuric emanations, and of many kinds of healing mineral springs. In the deadly calm of nature which has succeeded the extinction of the Latin volcanoes, we find it difficult to conceive an idea of the endogenous activity which prevailed at that time. All along the valley of the Roman forum, which valley corresponds to a fissure or rent of the soil between the Palatine and the Quirinal hills, volcanic phenomena continued to appear, even in historical times. The chasm under the north-east spur of the Palatine, into which Marcus Curtius is said to have leaped, seems to have been the crater of a kind of geyser. Near the Janus quadrifrons there were hot sulphur springs, described by Varro (LLV., 32). In the fourth century before Christ, powerful jets of water sprang up suddenly in a street called Justeia or Justeiana. Julius Obsequens speaks of other jets of reddish water, near the Senate Hall, which he compares to blood (*sanguine fluxit*). The district of the Campus Martius is called *campus ignifer* by Livy, *fumans solum* by Valerius Maximus, τὸ πυρῶδες πεδίον by Zosimus, on account of volcanic smokes and emanations, which for centuries have been noticed there.

The Campagna must have been even more strongly purified, especially around the slopes of the Alban hills, where hot mineral springs were particularly abundant. At any rate, this is the only way to explain the presence of a thriving, healthy, strong, and very large population in places which, a few centuries later (namely, at the end of traditional, and at the beginning of historical times), are described as pestilential. Autunnæ, Collatia, Corioli, Tellene, Politorium, Crustumerium, and many other centres, so populous in volcanic ages, seem to have been obliterated more by the deleterious effects of the climate, than by the chances of war, and the overpowering supremacy of Rome. In the Volscian district, along the marshy Tyrrhenian coast, there were numberless settlements — Ficana, Lavinium, Ardea, Pyrgi, and so forth. As regards the Pomptine region, Pliny asserts that it was the abode of a dense and thriving population.

It may be a simple coincidence, it may depend upon a mere accident, this fact of the extinction of human life at the precise time in which volcanic life was extinguished in the old Latium, but it is a chance worth scientific investigation. There can no longer be any doubt that malaria invaded the volcanic regions the very minute they ceased to be volcanic.

As regards the site of Rome itself, we can hardly believe the words of Cicero (de Rep., 2, 6), by which he describes it as *in regione pestilenti salubris* — "salubrious in a pestilential region" — although the same observation is made by Livy, who considers it almost a prodigious fact that the town should prove healthy in spite of the pestilent and desert region by which it was surrounded (5, 54–7, 38). They evidently refer to the state of things prevailing in their own age. How is it possible that a hill like the Palatine, only a few feet high, and surrounded on three sides by poisonous marshes, should be exempt from the effects of malaria? The other hills of Rome were not better favored, hygienically speaking; the Cælian and the Aventine suffered from the effluvia of the swamps near the Porta Metronia, the Quirinal and the Pincian likewise from those of the Caprea Palus; in fact, Livy asserts that, before the construction of the Cloaca Maxima, every valley between the seven hills was nothing but a boggy quagmire. These hot-beds of malaria were fed by numberless springs, sometimes above, sometimes under ground, impregnating the whole region with dampness, which is one of the three, and perhaps the most active co-efficient of the plague.

The clearest proof of the virulence of malaria in the first century of the history of Rome is afforded by the large number of altars and shrines dedicated by its early inhabitants to the Goddess of the Fever and other congenial divinities. At the time of Varro, there were not less than three temples of the Fever left standing; one on the Palatine, one in the square of Marius, on the Esquiline, one on the upper end of the Vicus Longus, a street which corresponds to, within certain limits, the modern Via Nazionale. The Esquiline quarter seems to have been the worst of all as regards sanitary conditions; in fact, besides the Fever's temple, there was an altar dedicated to the Evil Eye (Mala Fortuna), and an altar and a small wood dedicated to the Goddess Mefitis. Near the Prætorian camp, and near the modern railway station, I have found, myself, an altar consecrated to

[1] The third Lecture of a Course delivered before the Lowell Institute, Boston, November, 1886.

Verminus, the God of Microbes. On the top of the Sacra Via, there was a shrine of Orbona, who is considered to be the Goddess of ———; and lastly, in the very centre of the Roman forum, there was an altar sacred to Cloacina, a goddess of typhoid, I suppose.

It appears from the particulars just given, that the primitive inhabitants of Rome, acting as men always do act under such circumstances, when they find themselves exposed to the ravages of an unknown evil, utterly ignorant of its mysterious nature, and of the proper way to fight and to lessen its effect, raised their hands towards their gods, and actually increased their number, and contrived new ones, imploring from Heaven the help which they failed to secure with their own resources. After a lapse of many, many years the request of those simple and energetic men was granted, and their town was made comparatively healthy, not in a supernatural or miraculous manner, but as a just and well-earned compensation for the efforts they had made and for the trouble they had taken to establish a better state of things. Strange to say, after the fall of the empire, when Rome, almost annihilated by the inroads of barbarians, found itself in condition almost worse than the condition of the early age, powerless to accomplish any work of improvement, and exposed again to the full influence of malaria, the inhabitants turned again their eyes towards God, built a chapel near the Vatican in honor of the Madonna della Febbre — our Lady of the Fever — which chapel became one of the most frequented and honored chapels of mediæval Rome.

The principal works of improvement successfully completed in ancient times for the benefit of public health, and for checking malaria may be chronologically described as follows: I. The construction of drains. II. The construction of aqueducts. III. The multiplication and the paving of roads. IV. The right organization of public cemeteries. V. The drainage and cultivation of the Campagna. VI. The organization of medical help.

First, as regards the drains: The plan of the Etruscan engineers employed by the second Tarquinius to organize the drainage of the town, seems to have been to give an outlet to the ponds and swamps and marshes which stretched along the valley between each couple of hills, more than to carry off the sewage in the modern sense of the word. The Cloaca Maxima, *receptaculum omnium purgamentorum urbis*, the main collector, as Livy describes it, has been praised, admired, eulogized by Dionysius 3, 67, Pliny (36, 15) Aurelius Victor (V. Ill. 8), Strabo (V. 3), Dion Cassius (49, 43), and in modern times by Niebuhr and Bunsen. There is no doubt that the work is simply wonderful, an immense sewer, built twenty-five centuries ago, on unstable ground, against enormous practical difficulties, which still answers well its purpose, and is a work to be classed among the greatest triumphs of engineering. But the exactness of an archæologist compels me to say that the Cloaca Maxima, in spite of its name, cannot any more boast of the priority which it has enjoyed for so many centuries in the department of Roman sewers. In walking along the left bank of the Tiber, I had long noticed the mouth of another cloaca a trifle larger than the Maxima, and separated from it by an interval of some three hundred feet. I had heard it called the cloaca of the Circus Maximus, but I was ignorant on whose authority and by what reason such name had been applied. Six years ago, at the bottom of the valley which separated the Palatine from the Cœlian, between the Arch of Constantine and the Church of S. Gregorio at Monte Celio, a cloaca even larger and higher than the Maxima was discovered, three-quarters of a mile from its junction with the Tiber, at the depth of forty feet. The enormous size of its blocks, the beauty and perfection of its masonry, and the wonderful preservation make it compare most advantageously with its rival, the Maxima, to which it is altogether superior as regards length and extent of district drained.

The sewers of ancient Rome answered pretty well their purpose, especially if we take into consideration the remote age in which they were constructed, and the ignorance of the engineers of modern sanitary principles, and of the theory of microbes. Their greatest defects are, first, that they were used at the same time to carry off the sewage and the refuse of the town, and the rain water; second, that this double employment made it necessary to have large openings along the streets, so that the population was permanently brought in contact with the poisonous effluvia of the sewers. Many of these mouths of drains have come down to us, some exceedingly rough and primitive, some more elaborate and cut in marble. The most celebrated, perhaps, is the so-called Bocca della Veritá, a marble disc, five feet in diameter, with the head of the Ocean in alto-rilievo in the centre, through the open mouth of which the rain water would escape. This monument, the scarecrow of children who show an inclination to lie, is preserved in the portico of the church of S. Maria in Cosmedin, near the ancient forum Boarium. The third defect of Roman sewage was that each sewer emptied directly into the Tiber, thus polluting its waters, which were not only used for bathing and swimming purposes, but which were actually drunk.

The best apology for this state of things is to be found in the fact that not only modern Rome itself but many other European capitals, not to speak of provincial towns and villages, were kept until lately in an absolutely identical condition. The improvement in the department of sewers is one of the last, if not the very last achievements of modern science, in connection with hygiene, and it is still far from perfection.

The introduction of pure drinkable water into Rome, took place not before the fifth century after its foundation. Sextus Julius Frontinus, a magistrate, who presided over the department of aqueducts, under the Empire of Trajan, begins his "Commentaries" on the subject with the following remarks: "During four hundred and forty-one years the Romans satisfied themselves with the use of such water as they could obtain on the spot, from the Tiber, from wells, or from springs. Some of these springs are still held in great consideration, on account of their supposed healing efficiency. Such are the springs of the Casuœue, of Apollo and of ."

The waters of the Tiber, reaching Rome after a run of 249 miles through clay or alluvial grounds, are certainly not pure or clear; in fact they are saturated with mineral and solid matter. It results from official observations carried on between March, 1871 and February, 1872, that with an average daily efflux of 1,296,000 cubic metres, the river has carried down to the sea, 8,582,333 tons of sand, equal to a volume of 4,114,253 cubic metres. In spite of this, what the

ancients assert about the potability of its waters is proved by the fact that, after the destruction of imperial aqueducts, the population of mediævial Rome resorted again to this the only means of quenching its thirst: in fact the desire and the necessity of being near the river, must be considered as the leading cause of the abandonment of the healthy hills, and of the mustering of the population in the Campus Martius. The salubrity of the waters of the Tiber is celebrated by Alessandro Petroni, physician to Gregory XIII, and by Alessandro Bacci, physician to Sixtus V. Clement VII, in the journey to Marseilles, which he undertook in 1553, to celebrate the marriage of his niece, Catherine de Medicis, with the Duke of Orleans, afterwards Henry II, acting on the advice of his physician Corti, brought with him such a quantity of water from the Tiber, as to be sufficient for all the requirements of the journey. The same precaution was taken by Paul III, Farnese, in his wanderings to Loretto, Bologna and Nice.

Fancy what must have been in early Roman times the sanitary conditions of a town, the drains of which, not washed by any influx of water, would communicate from space to space with the public streets by large unprotected openings, and would empty into a river, the polluted waters of which were drunk by the whole population! The first remedy against the evil was adopted in 442 by the building of an aqueduct, which should carry into the city the water of a spring seven and a half miles distant, called aqua Appia, from the name of Appius Claudius Cæcus, the builder of the aqueduct, and of the Appian Way. The first step in the right direction once taken, it was easy to advance boldly. I cannot follow stage by stage the history of Roman aqueducts. I will simply trace a brief and comprehensive sketch of the water-supply of Rome, under the Empire, that is to say, at the period in which it was brought to perfection.

Comparing together the accounts left by Frontinus and Procopius on this subject, with the remains of acqueducts radiating from Rome in every direction, and which form such a characteristic landmark of the Campagna, we gather the following information:

Eighteen springs had been collected and canalyzed by the Romans from distances varying from a minimum of seven and a half miles to a maximum of forty-four. The waters were brought to Rome by means of fourteen aqueducts, the length of which varies from a minimum of eleven miles, to a maximum of fifty-nine. The aggregate length of these fourteen aqueducts amounts to three hundred and fifty-nine and one-third miles: of which three hundred and four miles underground, fifty-five above ground, the channel being carried on the top of really triumphal arcades, at prodigious heights, exceeding sometimes one hundred feet. The quality of the waters was very different. Best of all were considered the Marcia, the Claudia, and the Virgo: worst of all the Anio Vetus and the Alsietina; these two were accordingly employed only for the irrigation of gardens and for washing away the drains; and were drunk only in cases of absolute necessity. As regards the temperature, the Marcia was the coldest, "Marsas nives et frigora ducens Marcia" as Statius sings. It marks 46° Fahrenheit at the spring of S. Lucia. Tacitus relates among the crazy exploits of Nero his attempt to profane the sacred spring by swimming across it from shore to shore. The pollution of the pure icy waters was revenged with a rheumatic fever, which brought the young emperor to the verge of death.

I have been asked many times the question why the Romans have spent such an amount of time, labor and money in building these prodigious channels across mountains and valleys, tunnelling the former and bridging over the latter with tunnels and bridges many miles long; when it would have been so easy and so economical to lay down pipes, following at a moderate depth the undulations of the country. In other words, I have been asked whether the Romans have known or not the use of syphons. To be sure they knew it, in theory and in practice. Well known are the syphons of Pataræ a Aspendas and Pamphilia, of Constantina in Mauretania, and of Lyons in Gaul. The finest and most daring of all is the syphon of Alatri, a town in the Nernici district built by a wealthy citizen, Betilienus Varus, a century and a half before the Christian era, and which was capable of supporting a pressure of ten atmospheres. As regards the main aqueducts supplying Rome with a daily supply of fifty-four million cubic feet of water, it would have been impossible to substitute metal pipes for channels of masonry, because the Romans did not know cast-iron, and no pipe, except of cast-iron, could have supported such enormous pressures. Let us rejoice, at any rate, at this state of things, because had the ancients known the contrivances of modern industry, we should most likely have been deprived of the loveliest sight which our Roman campagna offers.

Before leaving this interesting subject of the water-supply, I must make two more remarks; the first concerns the system so widely followed in our age of damming across the beds of rivers in mountainous regions, in order to create artificial lakes or reservoirs of pure water, from which the supply is derived. The ancients knew and followed this system on a magnificent scale. One of our aqueducts, the Anio Novus drew originally its supply directly from the river Aniene at a place forty miles distant from Rome. It happened that every time the river was swollen by rains, the aqueduct would carry down troubled and undrinkable water, which would fill up the channel with incrustations of carbonate of lime, and choke the minor pipes. To mend the matter, and to obtain a constant influx of pure water, the valley of the Anio was dammed, not once, but three times, across the picturesque gorge or cañon of the Simbruine mountains, between the modern town of Subiaco and the Benedictine abbey of the Sacro Speco, and three artificial lakes were thus obtained, in which the water was purified three times.

The second remark concerns the system employed by the ancients in boring and tunneling the mountains for hydraulic purposes. Two very curious documents have come down to us on this subject in connection, of course, with hydraulic enterprises. The first is the official report of the perforation of a tunnel, to bring down to Bougie, Algeria, (called then Civitas Salditane), the waters of a spring, fourteen miles distant, now called Aïn-Seur. The report, engraved on a marble altar discovered in 1866, near Lambæse, begins with a petition addressed in the year 152 by Varius Clemens, governor of Mauretania to Valerius Etruscus, governor of Numidia. The petition reads as follows: "Varius Clemens greets Valerius Etruscus, and begs him in his own name and in the name of the township of Saldæ to despatch at once the hydraulic engineer of the III legion, Nonius Datus,

with orders that he should finish the work, which he seems to have forgotten." The petition was favorably received by the governor and by the engineer, Nonius Datus, who having fulfilled his misson, wrote to the magistrate of Saldæ the following report:

"After leaving my quarters, I met with the brigands on my way, who robbed me even of my clothes and wounded me severely. I succeeded after the encounter in reaching Saldæ, where I was met by the governor, who, after allowing me some rest, took me to the tunnel. There I found everybody sad and despondent, they had given up all hopes that the two opposite sections of the tunnel should meet; because each section had already been excavated beyond the middle of the mountain without effecting the junction. As it always happens in these cases, the fault was attributed to the engineer, as if he had not taken all the precautions to insure the success of the work. What could I have done better? I began by surveying and taking the levels of the mountain: I marked most carefully the axis of the tunnel across the mountain; I drew plans and sections of the whole works, which plans I handed over to Petronius Celer, then governor of Mauretania, and to abound in extra precautions, I summoned the contractor and his workmen, and began the excavation in their presence, with the help of two gangs of experienced veterans, namely, of a detachment of marine-infantry (classicos milites), and of a detachment of Alpine troops (Gæsates). What could I have done more? Well, during the four years I was absent at Lambæse, expecting every day to hear the good tidings of the arrival of the waters at Saldæ, the contractor and the assistant had committed blunder upon blunder; on each advancing section of the tunnel they had diverged from the straight line, each towards his right hand side, and had I waited a little longer before coming, Saldæ would have possessed two tunnels instead of one.". Nonius Datus, having discovered the mistake, caused the two diverging arms to be united by a transverse channel; the waters of Ain-Seur could finally come across the mountain; and their arrival at Saldæ was celebrated with extraordinary rejoicings, in the presence of the governor Varius Clemens and of the engineer.

To come back to my Rome, however, the longest tunnel perforated in its vicinity for the sake of the water-supply is the one of Monte Affliano, between Tivoli and St. Gericomio, 4,950 metres long. Its boring was (by Domitian) intrusted to one of the Imperial contractors, L. Paquedius Festus. A daring and difficult work it was, especially on account of the difficulty of ventilation in a channel only seven feet high, three wide. The contractor, before commencing the perforation, made a vow to a goddess of local worship, named the Bona Dea, to restore her decayed temple on the top of the mountain if the enterprise should succeed. The two opposite sections met most successfully on July 3, 88. The beautiful columns and fragments of statuary discovered by us on the summit of Mount Affliano prove that the vow of L. Paquedius was not what is called the vow of a sailor.

The influence of this magnificent supply of water on the health of the inhabitants of Rome and the Campagna can be easily understood. There was no farm, no country-house, no villa, there was no cluster, however small and insignificant, of rustic population which could not be favored with copious fountains of icy-cold, salubrious water. Villages and towns, such as Ostia, Portus, Gabii, Borillæ, Veii, the ruins of which are scattered to-day in a waterless desert, were, in Roman times, almost overflowed, and their aqueducts can vie in length and magnificence with the main aqueducts of the capital.

As regards public cemeteries — another hot-bed of pestilence — their reform and regulation took place even later than the reform in the supply of water. I speak, of course, of *public* cemeteries for the burial of artisans, of slaves, and of the poorest classes of the population, because people belonging to higher classes usually provided themselves with private tombs, either within the precincts of their villas and farms, or on the border of high roads. It is impossible to conceive an idea of the horrors of a common *carnarium* or foss in the first centuries of Rome. I will give particulars of one only, which occupied a large district on the Esquiline, because these particulars have been discovered by myself, and have not yet been fully disclosed to the general public.

The Esquiline cemetery was divided in two sections: one for the artisans who could afford being buried apart in Columbaria, containing only a given number of cinerary urns; one for the slaves, beggars, prisoners, and so forth, who were thrown in revolting confusion into common pits or fosses. This latter section covered an area 1,000 feet long, 300 deep, and contained many hundred *puticuli* or vaults, 12 feet square, 30 deep, of which I have brought to light and examined about seventy-five. In many cases, the contents of each vault were reduced to a uniform mass of black, viscid, pestilent, unctuous matter; in a few cases the bones could be in a certain measure singled out and identified. You would hardly believe me when I say that men and beasts, bodies and carcasses, and any kind of unmentionable refuse of the town were heaped up in those dens. Fancy what must have been the condition of this hellish district in times of pestilence, when the mouths of the crypts must have been kept wide open the whole day! But there is still something worse. You have certainly heard of the great fortification which protected Rome on the east side, called the Agger, or Embankment of Servius Tullius, from the king who raised it. This fortification, more than one mile long, comprised a ditch or moat one hundred feet wide, thirty deep, with ramparts one hundred feet wide, thirty high, supported and strengthened on the outside by a lofty, battlemented wall. It seems, under the republican rule, and on the occasion of a stupendous mortality — to use the words of Livy — the portion of the huge moat which skirted the cemetery of the Esquiline was filled up with corpses, thrown down as if they were carrion, until the level of the embankment was reached. The discovery of these revolting particulars took place in 1876, under the circumstances which I am going to relate. In building the foundations of a house at the corner of Via Carlo-Alberto and Via Mazzini, the architect, lead into deception by the presence of a solid bed of tufa on the northern half of the building ground, began laying his masonry and filling up the trenches at the uniform depth of twelve feet under the level of the street. All of a sudden, the ground gave way, and one-half of the area was sunk into a chasm thirty feet deep. On careful examination of the circumstances of the catastrophe, it was ascertained that whereas the northern half of the foundations rested on the solid embankment or Agger of Servius Tullius, the southern

half had been laid on the site of the ditch, filled up with thousands upon thousands of corpses, which, being brought in contact with the air after twenty centuries, had sunk into dust or nothing, leaving open a huge chasm. According to measurements which I took at the time, this mass of human remains was, at least, one hundred and sixty feet long, one hundred wide, and thirty deep. Giving to each corpse an average space of twenty cubic feet, which is more than sufficient, there were, at least, twenty-four thousand bodies in a comparatively small space.

As if all the evils described were not deemed enough, the town authorities had increased their efficiency by allowing the daily refuse of a population, numbering nearly a million souls, to be heaped up within and around the precincts of this Equiline cemetery. In later times, seven centuries after the foundation of Rome, they endeavored to stop the practice, or at least to regulate it. Decree upon decree was issued on the subject, and a line of stone cippi inscribed with sanitary rules was set up around the edge of the pestiferous ground. I have found three of these police regulations, engraved on square blocks of travertine. Here is the text of one: "C. Sentius, son of Caius, Prætor, by order of the Senate has set up this line of terminal stones, to mark the extent of ground which must be kept absolutely free from dirt and from carcasses and corpses. Here also the burning of corpses is strictly forbidden." Another hand, probably the hand of a man living in the neighborhood and within reach of the effluvia of the place, has written in huge red letters the following entreaty at the foot of the official decree, "Do carry the dirt a little farther; otherwise you will be fined." Couldyou believe that this line of stones, beyond which the refuse of the town could be legally thrown and be allowed to putrify under the burning sun, was only four hundred feet distant from the walls and embankment of Servius Tullius? And would you believe that on the day of the discovery of the above-mentioned stone, June 25th, 1884, I was obliged to relieve each quarter of an hour my gang of workmen, because the smell from that polluted ground (turned up after a putrefaction of twenty centuries) was absolutely offensive and unbearable even for men so hardened to any kind of hardship as my excavators.

The reform in this branch of public hygiene, the suppression of the popular cemetery on the Esquiline, took place only under Augustus, at the suggestion of his enlightened prime minister, C. Cilnius Mæcenas. He obtained from his sovereign and friend the concession of the whole district; buried it under an embankment of pure earth, twenty-five feet high, and a third of a square mile in surface, and on the newly-made ground he laid down his magnificent gardens, the world-known *Horti Maecenatiani*, of which I shall speak at length in one of my next lectures. The event proved to be of such unexpected importance for the improvement of the health of Rome, that Horace himself, the brilliant court poet, thought it worth being sung by his muse:

> Nunc licet Esquiliis habitare salubribus, atque
> Aggere in aprico spatiari, quo modo tristes
> Albis informem spectabant ossibus agrum (Sat. I, 8, 14).

I shall not mention other improvements carried on with the progress of Roman civilization, such as the paving of the streets, the opening of a thick network of roads in the Campagna, the drainage of damp districts, the spreading of suburbs, the careful cultivation of the soil, and so forth; because I shall have occasion to speak of these particulars in my lecture on the Campagna. One subject deserves more attention, because it is little known, the subject of medical attendance either public or private, which attendance is one of the most important factors in the sanitary arrangements of a civilized nation.

(To be continued.)

Original Articles.

SPINAL IRRITATION, ITS SYMPTOMS, PATHOLOGY AND TREATMENT.

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This affection occurs frequently among both women and men, but its diagnosis is often a matter of some difficulty, owing to the fact that it is sometimes found in conjunction with other affections, as, for example, hysteria and neuralgia. The symptoms, observed in a typical case are, however, so characteristic, that they may reasonably be ascribed to a distinct pathological condition.

Symptoms. Like spinal exhaustion the affection develops gradually in the majority of cases. The first symptoms to appear are vague pains in the dorsal region along the course of the vertebral column. These pains are usually provoked by even slight fatigue, such as that induced by rapid walking or riding. Sometimes the subject complains in the beginning of dull burning sensations between the shoulder blades or at the base of the neck; but whatever the character of the initiatory symptoms may be, the pains in the back become more and more severe in character, and conjointly with these there is almost always marked mental irritability. If at this time an examination be made, certain regions along the course of the vertebral column will be found extremely sensitive to pressure or tapping. A sponge, saturated with hot water, passed along the course of the spinal column, evokes painful sensations; while the wire brush employed in conjunction with the faradic battery, often discloses painful spots, which pressure and the hot sponge fail to reveal. I regard an electrical test of the degree of sensitiveness as of great importance in this and all other forms of obscure spinal affections; indeed, by the employment of this method of investigation, I have frequently succeeded in discovering sensitive areas, which, though exceedingly painful, had failed to reveal themselves upon pressure or percussion. I lay stress upon this point merely because I believe that far too much importance has been ascribed to the results obtainable by digital pressure and percussion. In the more exquisite cases, however, the morbid sensitiveness is so obvious that delicate tests are superfluous. Under these circumstances the friction caused by the clothing is often intolerable, while the passage of the finger along the course of the vertebral column reveals hyperæsthetic areas of the integument, which may be of great extent, or circumscribed in character.

Besides the condition of hyperæsthesia, various paræsthesiæ, such as burning sensations, formication, tingling, and alternating feelings of hot and cold are

frequently met with. On the other hand, absolute paralysis and anæsthesia are absent. Disturbances of motility, when they exist, merely consist in a lack of capacity for the performance of operations requiring endurance; — the patient is soon weary, and even moderate use of the muscles is liable to provoke amblitory pains, which, though often intense in character, wander from one portion of the body to another in the most unaccountable manner. Sometimes the subject complains of neuralgiform pains in the face and head, or in the upper or lower extremities; but hardly have these sensations become established, when they gradually, and in some cases suddenly, disappear, only, however, to reappear in the form of vague, visceral, genital or vesical pains. These unstable pains are extremely characteristic, and often give rise to great discomfort and apprehension on the part of the patient, as well as confusion in the diagnosis.

Local spasms are a frequent concomitant of irritable spine. Sometimes they assume the form of fibrillary twitchings, located in single muscles, whereas in another and larger class of cases spasms are widely distributed, involving entire groups of muscles. There is nothing of a violent or epileptoid character in these phenomena; they are usually evanescent in character and disappear under the influence of appropriate treatment. It may readily be conceived that the location of the symptoms exhibited in each case will depend upon whether the functional disturbance is found at the superior, dorsal, or dorso-lumbar portion of the cord.

Thus, if tenderness be found at the cervical portion of the cord, the subject is liable to exhibit vaso-motor disturbances manifesting themselves in sudden blushing and facial pallor upon slight provocation, or in an habitual frigidity of the extremities. Again, if there be hyperæsthesia above the dorsal segments of the vertebral column, digestive and other disturbances are usually present; while should the lumbar portions of the cord be functionally disturbed, vesical derangements, in the form of an increased and frequent desire to urinate give rise to the erroneous supposition that there is paralysis of the sphincter. Should the functional efficiency of the cord be more or less affected throughout its entire extent, the complex of symptoms is greatly amplified — there are palpitations, dyspepsia, spermatorrhœa, vaso-motor disturbances, fibillary twitchings, sleeplessness and great psychical irritability.

Spinal irritation, though a functional affection, is sometimes exceedingly obstinate in character; and even when we succeed in abating or removing the symptoms, they are prone to return. Nevertheless, there is no doubt, that in the vast majority of cases the disease is amenable to treatment, provided the therapeutic measures employed are appropriate, and at the same time rigidly adhered to, even after the symptoms have entirely disappeared.

Pathology. The pathology of spinal irritation is not as satisfactory as might be desired, owing in part to the defective manner in which the few autopsies on record have been conducted, and in part to the extreme difficulty of obtaining post-mortem examinations in this, as in other benignant nervous affections. Some writers entertain the belief that the symptoms are wholly attributable to hyperæmia of the cord, while other observers are equally convinced that anæmia is the true source of the phenomena. For my own part I am entirely of the opinion that the posterior columns, and more particularly those districts of the same, known as the posterior root zones, or columns of Burdach, are involved, and I can also conceive that the posterior horn is implicated, whether the circulatory condition present is one of hyperæmia or anæmia, I am by no means prepared to say with certainty. Of this, however, I am thoroughly persuaded, that the nervous elements themselves are in a state of abnormal irritability, whatever the condition of the circulation may be. And I believe, moreover, that the question of primary importance in treatment is the removal of such irritability by appropriate measures; and that having once accomplished this, we may confidently anticipate a corresponding amelioration in the vascular condition, be the same one of anæmia, hyperæmia or alternate hyperæmia and anæmia.[1] My views in this respect receive substantial support from the well-known relationship of the blood-stream to all active tissues. Further careful clinical and pathological observations may perhaps serve to increase our knowledge respecting the intricate morphological questions involved.

Diagnosis. It is undeniable that spinal irritation is an affection often extremely difficult of accurate diagnosis; at least, this is true of the less typical cases. Where, however, the symptoms are well marked, less difficulty will be experienced in forming a correct conclusion as to the true nature of the affection.

The differentiation of spinal irritation from *hysteria* is, in a large number of cases, exceedingly difficult. This inability to differentiate the two conditions in certain cases does not, however, seriously interfere with the plan of treatment; for, it is but reasonable to infer, that where the symptoms of two diseases are so inextricably blended, there must be a corresponding fusion of pathological causes. On the whole, therefore, the opinion that hysteria and spinal irritation, though separate affections, are frequently associated in one and the same individual, seems plausible. Where, however, the predominant symptoms of hysteria, general spasms, globus, and paralytic phenomena are found in conjunction with only minor indications of spinal irritation, the case should be adjudged one of hysteria.

From *spinal exhaustion*, the affection under consideration differs in this: that in the latter disorder, disturbances of sensibility predominate, whereas, in the former, marked diminution of the functional resources of the cord is the characteristic feature.

Locomotor ataxia and *myelitis*, even in their earlier stages, are not readily confounded with spinal irritation, since the lancinating pains, incoördination, and girdling sensations peculiar to ataxia are wanting; and the same may be said of the anæsthesia, paralysis of the bladder and voluntary muscles of the limbs and contractures, which are so characteristic of the latter affection.

Spinal irritation is difficult to differentiate from *hyperæmia* of the cord, except when the hyperæmia is sufficiently intense to cause paralysis. It has been urged by a medical writer of distinction[2] that "spinal irritation is made worse by the administration of ergot. . . . The reverse is true of strychnia, which, in all cases, aggravates the symptoms of myelitis, meningitis,

[1] Vide: Views of Beard and Rockwell; Treatise on Medical and Surgical Electricity. Second edition. pp. 450. New York. 1875.

[2] "A Treatise on the Diseases of the Nervous System." By William A. Hammond. Page 47, seventh edition, 1881.

or congestion, while it is an efficient means of cure in spinal irritation." My own experience does not accord with the above; indeed, it leads me to a diametrically opposite conclusion. At this very moment, I have under my care a gentleman manifesting all the appearances of spinal irritation, in whom the symptoms of the affection are greatly aggravated by strychnia in doses of one forty-eighth of a grain. This phenomenon is readily explained if we admit that the sensory districts of the cord are in a state of erethism. It is a matter of secondary importance whether this condition of irritability is *accompanied* by a hyperæmic or anæmic state of the cord or not.

Meningeal tumors, during their early stages, may doubtless give rise to symptoms closely resembling those induced by spinal irritation. But the disturbances produced by tumors are stable in character, and confine themselves with more or less strictness to certain districts, whereas, the migratory character of the symptoms of spinal irritation constitutes a distinctive feature.

On the whole, therefore, where severe pain of an amblitory character exists in the spine, accompanied by great tenderness of the spinous processes, but without paralysis, anæsthesia, or other severe symptom pointing to grave organic trouble, it is safe to assume that we have to do with a case of spinal irritation.

Treatment. In the treatment of spinal irritation, the attention of the physician should be directed to those symptoms which owe their origin to the functional derangement of the cord, on the one hand, and to those manifestly attributable to a secondary condition of cerebral erethism on the other.

The removal of the local hyperæsthetic spots, though often a protracted operation, is usually attainable by the employment of a sufficient amount of patience, conjoined with appropriate local measures. Among these have been recommended counter irritation by means of blisters, or the actual cautery. I cannot say I resort to these measures as much as formerly, for reasons which I will presently state. On the other hand, the application of the galvanic current to the spine, one electrode being placed two or three inches above the painful point, and the other an equal distance below it, will be found of service in many instances. The applications should last from fifteen minutes to half an hour, and should be undertaken at least once a day. General faradization also yields excellent results, especially in cases of debility and anæmia. Of internal remedies, iron, quinine, and zinc will be found most useful, where the condition of the stomach will permit the employment of medicine.

Neuralgic pains, stomachic difficulties, and other complications should be treated symptomatically in the order of their occurrence. We have already alluded to the secondary condition of cerebral erethism, manifesting itself in insomnia and extreme mental irritability. These latter symptoms exert an exceedingly prejudicial influence upon the general health of the patient, and serve to sensibly diminish the prospects of a speedy recovery; and they should, therefore, claim the particular attention of the attending physician. For an extended account of the measures to be adopted in the treatment of the various derangements of sleep, I would refer to the special monograph upon that subject by the author of this paper.[3] As regards the irritability, we would recommend the employment of the bromides, Mariani's coca wine, and, where there is no tendency to vaso-motor derangements (cerebral hyperæmia), stimulants may be administered in moderate quantities. And here, I would enter a protest against the extravagant and hysterical utterances of certain persons regarding what they conceive as dangerous attributes of the coca-preparations. In this matter, I agree with Hammond, that there is no foundation, whatever, for this extreme apprehensiveness. I usually give brandy, whiskey, or rum; or, where the stomach will bear it, Burgundy or Bordeaux, which may be taken at dinner. The administration of stimulants is, however, often impossible, owing to extreme susceptibility.

After treating several cases, the physician inevitably becomes aware of the fact that in a certain proportion, his efforts do not meet with complete success; there is, in a word, an inordinate persistence of soreness and pain on pressure above the vertebræ — a condition discouraging at once to physician and patient. In such cases, I have frequently resorted to local medication of the cord by means of deep injections between the vertebræ of the hydrochlorate of cocaine, in solutions of varying strength. The hyperæsthetic spots are those which I usually select for the injections, but I have no hesitancy in making from six to one dozen or more such injections along the course of the spine. Care should be exercised, in making these injections, to place the needle as near the ligamentum insterspinosum as is consistent with a prudent desire to avoid wounding the cord.[4]

The results obtained by this plan of treatment are often astonishingly favorable; and it is matter of surprise to me that in the face of the excellent effects obtained by local medication of nerves, literature contained nothing concerning the application of this principle previous to publication of my first paper.[5] I will merely add that in the *New York Medical Journal* for November 6, 1886, I have described a painless method of anæsthetizing the skin which I believe is destined to prove an important aid in the treatment of hyperæsthetic conditions of the nervous system. At an early day, I purpose publishing a still more explicit account of this method, embodying a wide range of cases. I need only observe that various other medicaments may be employed in the same way.

Finally, it must not be forgotten that this and similar functional affections of the cord exhibit, in spite of the apparently benignant nature of their pathology, a pertinacity which is often in the highest degree trying to patient and physician alike. Perseverance and minute attention to the various phases of each case will often, however, accomplish wonders.

[3] "Brain Rest, being a Disquisition on the Curative Properties of Prolonged Sleep." By J. Leonard Corning, M.D. New York: G. P. Putnam's Sons. 1885. Second edition, page 36, *et seq.*

[4] For the benefit of those who are interested in the development of more potent methods of affecting the cord in disease of the brain, I would refer to my article contained in the New York Medical Journal for October 31, 1885, and also to my monograph on "Local Anæsthesia." New York: D. Appleton & Co. 1886.

[5] Op. cit.

— Among the replies to an advertisement of a musical committee for "a candidate as organist, music-teacher, etc.," was the following one, "Gentlemen — I noticed your advertisement for an organist and music-teacher, either lady or gentleman. Having been both for several years, I offer you my services." An exchange inquires very naturally if this was a hermaphrodite?

NOTES ON THE TREATMENT OF STONE IN THE BLADDER.[1]

BY A. T. CABOT, M.D.,
Surgeon to the Massachusetts General Hospital. Surgeon to the Boston Children's Hospital.

RECURRENCE OF STONE.

NOT infrequently after the removal of a stone another one forms in a shorter or longer time; and this may come about in one of four ways, which we will consider *seriatim:*

I. A uric-acid stone may be followed by another, on account of the persistence or reappearance of the uric-acid diathesis. The same may be true, though less commonly, in the case of an oxalic stone.

Cases 14 and 15 furnish good instances of the recurrence of uric-acid calculi.

Case 14 was that of a man of fifty, who was first troubled in 1876 by the occasional passage of small stones. He was operated on by lithotrity in several sittings, and was then free until 1883, when his symptoms returned, and he was operated upon then, and again in 1884 by litholapaxy. Several small stones were removed at each operation, and each time he had a considerable period of relief from symptoms. I saw him first in December, 1885, at which time he was again passing small stones, and, by litholapaxy, I removed two uric-acid calculi, of about twelve grains each.

Case 15 is that of a man seventy-five years old, who was relieved of a stone by Dr. Bigelow in 1868 by lithotrity, in two sittings. When I saw him in February, 1886, his trouble had recently returned, and I removed a uric-acid stone weighing nineteen grains.

To prevent this sort of recurrence, patients who have once suffered from a uric-acid or oxalate-of-lime calculus should be instructed in regard to the dietetic and hygienic precautions, which will be likely to counteract a tendency to excessive uric-acid formation. Sugar in every form is harmful in these cases, as are also all fatty articles of food, and rich, highly-seasoned dishes. These should, accordingly, be avoided. Malt liquors and wine, especially the sweeter varieties, should be given up, and if the stimulant effect of alcohol is desired, spirits largely diluted should be preferred.

Systematic exercise should be taken, if possible sufficiently violent to excite moderate perspiration, and the skin should be cared for by regular bathing and vigorous rubbing. If the patient is constipated, his bowels should be regulated, and this may well be done by a morning glass of Friedrichshall or Carlsbad water. Thompson recommends a long course of saline waters for these patients with uric-acid tendencies, and regards their effect as due to a stimulant action upon the liver. Whatever the *rationale* of their use, they are of undoubted benefit when a constipated habit exists.

Where uric-acid crystals are abundant in the urine, and the danger of stone formation is imminent, alkaline diuretics, by correcting the over-acidity of the water, may be of temporary benefit and tide over the danger for that time, but without the addition of general treatment, the uric acid quickly returns upon their disuse.

II. A soft, phosphatic stone may be reproduced after removal, if the chronic cystitis and alkaline condition of the urine which led to its original formation persists. This is not infrequently seen in those cases where an obstruction to the complete emptying of the bladder perpetuates the fermentation of the urine.

Cases 1, 2, and 13 furnish instances of the recurrence of soft, phosphatic stones. Cases 1 and 2, which were operations upon the same patient, have been reported at length in the *Boston Medical and Surgical Journal* for August 28, 1884.

The patient was a man of sixty-five, with an enlarged prostate, which did not allow of the passage of any urine without the aid of a catheter. In May, 1883, a small, soft stone was removed by Dr. Bigelow, the patient returning the next day to the country. In November, 1883, I removed a large number of small calculi, and he was for several months free from discomfort, and his urine was almost clear. He then had an attack of cystitis; his pain returned, and in July, 1884, I again removed a number of small calculi.

Eighteen days later, the alkaline condition of the urine having persisted, the bladder was washed out with the evacuator, and over two hundred little stones, which, altogether, weighed but fourteen and a half grains, were removed. A fortnight later, another washing obtained over a hundred of these little calculi, and six days later, thirty more were pumped out. The urine had now cleared up considerably, and subsequent washings failed to find any more calculi. The separate accretion of all of these little stones about different foci shows how great the tendency in this case to stone formation.

Case 15. A man of sixty, with prostatic obstruction and residual urine, had a stone weighing one hundred and forty grains removed. A subsequent washing with the evacuator did not find any sand or fragments, but he insisted on leaving the hospital before the urine was clear of pus, or had lost its alkalinity. He neglected the daily irrigation of the bladder, which was advised, and, as I afterwards heard, he appeared five months later at the City Hospital, and had a small stone crushed. In answer to an inquiry of mine, Dr. M. F. Gavin, who operated upon him at this time, kindly wrote me as follows: "In M.'s case, the stone was small, and so soft that the moment the crusher seized it, the sense of resistance disappeared. The bladder was washed ont, bringing away a quantity of detritus; no fragments. There was no evidence present of any old fragments."

It is evident that, to prevent this sort of recurrence, it is important to entirely relieve the cystitis before allowing the patient to pass from under treatment, and then to send him away with a clear understanding of the importance of immediately correcting any tendency to alkalinity and pus formation.

When an obstructed urethra is the cause of the cystitis, the obstruction should be relieved if possible. If this cannot be accomplished, as often happens in the case of an enlarged prostate, the evils of retained urine must be lessened as far as possible, by systematic catheterization.

The moment that any considerable amount of mucus or other evidence of commencing fermentation appears in the urine of one of these patients, thorough irrigation of the bladder must be instituted and kept up, until the normal condition is again reached.

A good deal may also be accomplished by internal medication in clearing up urine which has become foul and ammoniacal. The occasional usefulness of

[1] Concluded from page 520.

many diuretics is well known, and buchu, uva ursi, triticum repens, citrate of potash, and even the free use of clear spring water will often help to bring about a good result.

Some drugs are thought to have even a more direct action in reducing fermentation. Benzoic acid and its salts have some reputation in this regard, and I have used them in many cases with good effect. Sometimes, however for no apparent reason, they utterly fail, and they have the occasional disadvantage of disturbing the stomach. Eucalyptus oil is also exhibited to check fermentation in the urine. Bartholow ascribes to it great efficacy.

III. Sometimes the successive escape of several stones from the kidney gives rise to several consecutive attacks of stone in the bladder.

The treatment proper for stone in the kidney is appropriate here, together with the prompt removal of the stone when its presence in the bladder is manifest.

IV. Lastly, if a fragment is left after an operation, it may serve as a nucleus for another stone.

The danger of this mischance is greatly increased by any obstruction to the flow of urine, such as is caused by an enlarged prostate. The bladder in such a case is usually sacculated so that fragments are more likely to escape removal by the evacuator, and if a fragment is left it is very unlikely to be afterwards voided by the natural efforts of the bladder, but remains in the residual urine.

In a healthy condition of the bladder, when the urine is thoroughly expelled at each act of micturition the retention of a fragment of small size is not likely to occur.

Case 16 is an instance of a second operation on a patient in whom a minute fragment was left at a previous crushing.

The patient, a man of seventy-four with almost complete obstruction to micturition and a dilated, sacculated bladder, was first operated upon by me in June 1885. At that time a small stone was removed which was itself a fragment of a considerable stone which had been crushed and pumped out by a surgeon at his home in New Brunswick. Subsequent attempts to crush this fragment had failed, and he consequently sought advice from Prof. H. J. Bigelow, who kindly referred him to me.

The fragment in question was very hard to seize with the lithotrite, and it was only when the bladder was almost emptied of water that it could finally be grasped and crushed. The urine cleared up rapidly and he left the hospital apparently free from bladder symptoms, except so much as would naturally be caused by the persisting obstructions in the prostate.

He returned in March, 1886, in very much better health than when he left us, and with a gain of thirty pounds in weight. He again, however, showed symptoms of calculus, and on March 30, 1886, I crushed and removed a stone weighing thirty-four grains, which had as a nucleus a little crumb from the earlier stone which was somewhat darker in color than the surrounding crust. After this operation, he went home well and has remained so.

As a guard against the retention of fragments, as in this case, the bladder should always be washed out with the evacuator one or more times after the operation, before discharging the patient. This can readily be done without ether.

In using the pump the sacculated character of many of these bladders should be remembered, and a careful search should be made lest a fragment be caught and held in some side pocket. The orifice of the evacuating tube should be turned successively towards each part of the cavity in order to dislodge with the current any such fragment.

It has been urged against litholapaxy that recurrences are specially liable to take place after it, and I have therefore spoken somewhat at length of the precautions which will render the retention of a fragment almost impossible. This is the only cause of recurrence which can fairly be laid at the door of the operation, and it is one from which lithotomy is not exempt. The difficulty of removing the last fragments when a soft stone breaks in the lithotomy forceps is notorious.

The other causes of recurrence are common to every operation, and I have tried to emphasize the importance of first correcting the faulty condition, which made the formation of the stone possible, and then of making each patient understand the future dangers and how they are to be avoided.

LITHOLAPAXY IN THE FEMALE BLADDER.

Case 22 was an instance of this. Some difficulty was anticipated in the matter of seizing fragments, as in women the presence of the uterus behind the bladder makes the posterior wall of the latter irregular and flatter than in man, so that fragments lying upon it would not naturally gravitate to the centre as in the male bladder.

When using the lithotrite at an angle of forty-five degrees the expected difficulty was met. But it was found that when the handle of the instrument was raised to a vertical position, the blades rested on the yielding vaginal wall close to the urethral entrance, and by depressing this made it the most dependent part of the bladder, into which the fragments gravitated and where they were readily seized.

The operation went quickly and easily, without any injury to the urethra, and convalescence was rapid and satisfactory.

FISTULA AFTER LATERAL LITHOTOMY.

Case 3 furnishes an instance of one of the accidents which may follow lateral lithotomy. The patient, a boy of ten, was cut on November 11th, 1884, and a very rough mulberry calculus was removed. The incision entered the urethra a little further forward than was necessary, somewhere about the entrance to the membranous portion. The wound healed slowly and left a fistulous opening through which a small amount of urine escaped at each micturition. There was also a slight involuntary leakage when the bladder was full. After this had persisted for several weeks it was thought probable that the wound in healing had left a slight stricture in front of the fistula, which by its obstruction to the natural flow of urine constantly forced some of it through the opening. An examination showed this to be the case, and the passage of bougies for a few weeks relieved the stricture and brought about a healing of the fistula.

CALCULUS WITH SHOE-STRING NUCLEUS.

Case 10 was interesting in that a leather shoe-string formed the nucleus of the stone. The patient was a young man of twenty, who in October, 1885, came up from New Brunswick with symptoms of stone which had troubled him since the previous spring.

A stone being felt, he was etherized and it was easily seized and crushed.

At the first withdrawal of the lithotrite, its jaws came out clogged with bits of a leather shoe-string. Other short bits were pumped out with the débris of the stone and again other portions were removed with the lithotrite. At the end of the operation 113 grains of calculus matter and eight inches of string had been obtained.

It was subsequently learned from the patient that during the previous April he had been confined to bed by a sore foot and finding it hard to pass water had improvised a bougie and had let it slip from his fingers into the bladder. He had not before mentioned the fact to his physician because he supposed that the string had long since dissolved.

STRICTURE OF THE URETHRA COMPLICATING LITHOLAPAXY.

In Cases 7 and 18 a stricture of the urethra complicated the operation. In both instances the stricture was divulsed and the litholapaxy was at once proceeded with; no difficulty being met in its performance and there being no subsequent ill-effects during convalescence. Dr. Bigelow has shown by many successful cases that these two operations may be safely and advantageously combined in one sitting.

Case 21 was an example of a still further complication. This patient not only had a close stricture, but also had several false passages starting from the urethra in front of it; these resulted from previous attempts to reach the bladder. After divulsion of the stricture these pockets so interfered with the introduction of instruments that it became evident that the large calculus which was found could not be safely removed through the urethra, and consequently suprapubic lithotomy was resorted to.

For a full account of this case, see *Boston Medical and Surgical Journal*, November 11th, 1886.

REPORT OF PROGRESS RELATING TO FOOD AND DRUGS.

BY B. F. DAVENPORT, M.D., OF BOSTON.

ADULTERATIONS IN WINE AND SPIRITS.

THE following comment, made by Dr. S. W. Abbott in the late Public Health Supplement to the Seventh Annual Report of the State Board of Health, upon the report of the analyst on his examination of over one hundred samples of wine and distilled spirits, of which but ten were found to fairly be what they claimed to be, is of general interest to the profession: Noting that the principal adulterants were found to be alcohol, water, sugar, fruit extracts, and flavoring ethers, and that in no case was any ingredient found more harmful than the alcohol itself, he adds: "These examinations have also shown the falsity of a popular impression, which has been created and fostered by the ill-advised statements of public lecturers, and also published documents that the harmful effect of the habitual use of alcoholic stimulants is due to the adulterations to which they are subjected, rather than to the alcohol which they contain. It is sufficient to say that such statements have no foundation in fact, nor are they in the interest of justice, temperance, or truth."

LEAD IN HAIR DYES, AND MORPHINE IN OPIUM-HABIT CURES.

In the same reports, he also notes the large number of hair dyes found by the analyst to contain lead, and that almost all the so-called opium habit "cures" or "antidotes" so extensively advertised throughout the country were found by the analyst to contain morphine, the very thing for the use of which they had been so falsely lauded, and, therefore, were being so vainly used.

HOPEINE.

A new narcotic substance, under the name of hopeine, has been placed upon the London market as a substitute for morphine and quinine by a firm, who claimed that it was an alkaloid obtained by them from hops, and that they had found it present in the largest quantities in the wild hops of Central America. The substance is not found in German hops. On chemical analysis, Dr. Paul and others have found the substance to be of a variable nature, but that it usually corresponded to an admixture of two parts of morphine with one of cocaine, and he characterizes the attempt to introduce upon a pseudo-scientific basis an article that is only a mixture of two well-known substances as a piece of foolish impudence that almost passes belief. Moreover, Dr. A. Gray states that the wild hop grows so sparingly that he had never seen it where he could have gathered a single pound of the dried hops.

EULYLYPTOL.

A preparation, under the name of eulylyptol, has been recommended in *Journ. Pharm.*, October 15, p. 361, by Dr. Schmeltz, as an antiseptic preferable to iodoform, corrosive sublimate, or carbolic acid. It consists of a mixture of six parts of salicylic acid and one each of carbolic acid and oil of eucalyptus. The carbolic acid seems to enter into a chemical union with the other ingredients, and is not to be found in a free state. The mixture has a strong aromatic odor, and an acrid burning taste. It is nearly insoluble in water, but readily soluble in strong alcohol, ether, chloroform, and in alcohol and glycerine. It is also soluble in ammonia and alkaline solutions. According to Dr. Schmeltz, it completely arrests the fermentation of all putrescible substances. It will preserve urine for months. In many respects it seems to resemble salol, the new antiseptic produced by Prof. von Mencki, reported favorably upon by M. Sohli in *La Semaine Médecale*, April 14, 1886, and recommended as preferable to the usual forms in which salicylic acid is used is the treatment of rheumatism.

NATIONAL FORMULARY.[1]

Under the auspices of the American Pharmaceutical Association, a committee has been appointed, consisting of five pharmacists resident in New York City and Brooklyn, and one representative from each of the State Pharmaceutical Association, to prepare a standard and recognized guide for the preparation of such compounds as are not officinal in our National Pharmacopœia, but which are above the level of mere trade-receipts, and are not of a trivial or improper character.

The special committee presented a report at the late meeting of the Association, containing the following propositions: "Scope of the National Formulary — The National Formulary, to be published under the authority of the American Pharmaceutical Association,

[1] American Druggist, October, 1886.

may contain the formulas of such preparations as have either been formerly officinal in the United States Pharmacopœia and have been discarded, though still in demand, or such as have never been officinal, but deserve recognition, because more or less generally in use. Among the latter may be any preparations contained in foreign pharmacopœias, if there is known to be a sufficient demand for them in any section of this country. It shall also contain the preparations belonging to so-called "elegant pharmacy," but it shall not be encumbered with purely technical, trivial, or fancy preparations."

Reports of Societies.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES M. GREEN, M.D., SECRETARY.

October 9, 1886, the President, Dr. A. D. Sinclair, in the chair.

EXTRAORDINARY CARDIAC EXCITEMENT BEFORE A FIRST MENSTRUATION.

Dr. Draper reported the following case: The patient was an overgrown, nervous, well-developed girl, aged thirteen years and two months. Two years ago she was under medical treatment for chorea. During the past three years she had not attended school. Recently, her health had been satisfactory, and it was the intention that she should presently resume school discipline. Her mind was undeveloped and her tastes were childish; she liked the plays and companionship of little girls much younger than herself. She had never menstruated.

In the night of July 1st, she was restless and uneasy, sleeping but little. Her mother attributed the unrest to a somewhat later and heartier supper than she was accustomed to and recalled also that the girl exercised rather more vigorously than usual after supper. Dr. Draper saw the patient at 3.30, A.M., July 2d. She was tossing, restless, anxious, and irritable. She complained of pain in her left side and of the "thumping" of her heart. There was an occasional short, dry cough,—the familiar cough of cardiac palpitation. The hand over the heart detected a rapid but regular and not violent action of that organ. The stethoscope discovered no abnormal sounds; the rapid action was the only abnormality. There was no irregularity or intermission, then or later. The heart-beats, at this visit and subsequently (on one occasion verified in consultation) were counted as follows:

July 2d, 3.30, A.M.	212	July 4th, 9.30, A.M.	234
" 2d, 7.30, P.M.	222	" 4th, 5.15, P.M.	230
" 3d, 10, A.M.	228	" 5th, A.M.	98.
" 3d, 5.30, P.M.	236	" 6th, A.M.	80.

The highest temperature which the thermometer recorded meanwhile was 100.5° in the afternoon of July 2d.

The culmination of the case was reached July 5th, in the afternoon of which day menstruation began in a perfectly normal manner, without pain or other disorder. The pulse quickly regained its normal rate and kept it thenceforward. In August and September there was no recurrence, either of the catamenia or of cardiac disturbance.

During the three days, July 2d, 3d, and 4th, various measures directed to the control of the heart were wholly negative in their effect. Rest in bed, low diet, counter-irritants, emetics, cardiac sedatives and stimulants (aconite, veratrum, digitalis), proved unavailing; but with the premonitory indications of the menstrual function the heart resumed its natural action.

AXILLARY LYMPHANGITIS WITH LYMPHORRHAGIA? OR SUPERNUMERARY MAMMA WITH LACTEAL SECRETION?

Dr. A. H. Johnson, of Salem, reported, by invitation, the following case of axillary tumor coincident with pregnancy:

Mrs. S., already the mother of two children, was expecting her third confinement during the first week in August, 1886. Some time in April she discovered a lump in the right axilla. Although it grew each week very noticeably, she made no mention of it to her friends. During the second week in July it was accidently discovered by her husband, who at once called me to examine it. I called on the 11th of July and found in the right axilla a pendulous tumor bearing a close resemblance to a male scrotum. It was pear-shaped and somewhat flattened by compression between the arm and the chest. Its constricted base seemed but slightly adherent to the subjacent tissues. The skin covering it was thin, but loose. Around its base was the growth of hair belonging to the axilla. When taken in the hand and squeezed, the upper portion of it felt much like a varicocele, while distributed in its mass, irregular semi-elastic lumps could be felt, varying from one and a half inches long and three-fourths of an inch in width, to one inch in length and one-fourth or one-half an inch in width. It seemed like a growth made up of irregular, elongated and semi-fluctuating lobules of fat. It was painless and gave but little inconvenience. Owing to its harmless character treatment was deferred until after delivery. The patient was not seen again until the 4th of August, the day of her confinement. During the little more than three weeks since my first examination, it had increased about one-third in size, and another lump the size of an English walnut had appeared in the left axilla. After a comparatively easy and natural delivery, with the distention of the breasts, the tumor in the axilla enlarged. It became tense, tender, smooth, and slightly reddened; and measured nine inches in circumference. As the breasts yielded their milk the tumor grew softer and smaller, and at the end of a week was reduced about one-fourth in size. Seventeen days after delivery I was called to explain a new feature of the growth, and learned that the patient had for several days found her clothing about the right side of her chest quite wet. The source of this moisture was traced to the axilla. It was then discovered that when the tumor was squeezed there issued from four or more minute openings, scarcely perceptible to the naked eye, a fluid resembling milk. From that day to the time of this report the tumor becomes a little distended when the breasts are full, just previous to nursing the child, and when pressed continues to yield a milky fluid in small quantities. The smaller lump in the left axilla has disappeared. Is this a case of lymphangitis with lymphorrhagia or a case of supernumerary mamma? If the latter, why was there no such development of these glands in the two previous pregnancies?

Dr. Johnson subsequently made the following additional report:

Soon after the last meeting I took from our patient, in separate bottles, two samples of lacteal fluid, one from the breast and the other from the axillary tumor, and examined them with the microscope. The fluid from the tumor is to the naked eye a much thicker and cream-like liquid than the thin bluish breast-milk. Under the microscope the specimen from the axillary glands reveals in addition to the finely emulcified fat of the breast-milk, a coarser emulsion of fat with large colostrum cells, the whole field being crowded with these more solid constituents of milk.

Soon after my return to Salem I found in the "Quarterly Compendium of Medical Science" a report of a paper on the "Development of Mammary Functions by the Skin of Lying-in-Women," which was contributed by Dr. F. H. Champreys to the Royal Medical and Chirurgical Society. In this paper the author reports thirty cases which had occurred in the General Lying-in Hospital, all illustrating the title of his paper. In it he says that "the cases of axillary lumps are believed to be now described for the first time." "They seem to prove that in lying-in women the sebaceous follicles of the skin are capable of producing true mammary secretions." . . . "They confirm the opinion that the breast is a highly specialized aggregation of highly specialized sebaceous follicles." "Dr. G. D. Pollock believed that this was the first paper that had been contributed upon this subject." Dr. Creighton "believed that the lumps or glands were not derived from *sebaceous* glands, but from another cutaneous structure that existed in the human axilla. He had incidentally described the glandular stratum in a paper read before the Society four or five years ago. Similar structures were met with in the skin of a dog. In the human axilla they had been described by Sappey, Kölliker, and Frey. These glands were coated by a remarkable layer of plain muscular fibres. The remarkable muscular coating would enable a diagnosis to be made between them and sebaceous glands when an opportunity for anatomical examination of such lumps arrived. Dr. Champney was inclined to accept Dr. Creighton's view of the origin of these lumps." He then added that "these lumps *were not perceptible before delivery*, swelled after parturition, and again slowly decreased in size; in these features and in yielding a secretion of milk they differed altogether from lipomata."

If Dr. Champney is correct in this deduction from his thirty cases, then in the case I have reported, we probably have a lipoma combined with a Champney "axillary lump," made up of specially developed cutaneous glands peculiar to the axilla. If so, then, we shall have a lipomata left when the breasts become inactive, and an opportunity for anatomical examination. If not, then Champney's generalization must be corrected, since the lump in the case of Mrs. S., appeared at least three and a half months before delivery.

DR. SINCLAIR had seen two cases similar to those reported. The breasts were enormously developed, and swellings appeared in each axilla. These swellings were oblong in shape, the size of a Bartlett pear: they never secreted anything so far as he could see. One woman had borne several children and these swellings appeared after every labor. In one case a slight swelling occurred at the menstrual period. She had always regarded these tumors as supernumerary mammæ. They could not be emptied, and were very tender at first. The breasts, in one case, measured eighteen inches across.

DR. REYNOLDS asked if supernumerary glands were not situated below the mammæ and in pairs.

DR. BROWN had seen it stated that these glands were either just below the mammæ or on the abdomen.

DR. BAKER had read of a child, three years of age, who had a nipple in the clavicular region; but there was no sign of a gland.

DR. J. T. G. NICHOLS, present by invitation, reported the following case:

INDUCED LABOR AT THE EIGHTH MONTH ON ACCOUNT OF PELVIC DEFORMITY.

Mrs. B., thirty-seven years of age. First labor, September 18, 1882. Conjugate diameter rather less than four inches. The sacral promontory was prominent and on the horizontal ramus of the left pubes near the symphysis was an exostasis as large as a horse-chestnut. Forceps were used without success, and labor was terminated by craniotomy and subsequent version. The child, a male, weighed twelve pounds. The mother recovered well. She was advised to have labor induced prematurely should she again become pregnant.

In January, 1884, she aborted at about three months. She became pregnant for the third time in March, 1884, menstruation ceasing on the 20th.

November 29th, at 9, P.M., a large elastic bougie was passed into the uterus to the depth of seven inches. There was no hæmorrhage. The head of the fœtus presented. She had a severe cough and the bougie was found outside the uterus on the morning of the 30th. There had been no pains, but the os was softer and there was a slight discharge of dark-brown mucus. The bougie was replaced and kept in place by a cotton plug. On the 1st of December the bougie having been retained in its place, there had been a few slight and irregular pains in the back and thighs. At 4.30, P.M., the vagina was moist, the bloody mucus increased in quantity, the os soft, admitting two fingers easily. The patient was etherized and the os fully dilated by the hand in about forty minutes. The membranes were so firm that I was able to reach a foot without rupturing them, turning the child "as in a bucket of water," as Gooch expresses it, and delivering it without delay. The child, a female, weighed seven and one-half pounds. Both mother and child did well. The child is now, at two years of age, an unusually strong and healthy specimen.

November 3d, 1885, menstruation ceased. July 11th, at 3, P.M., a bougie was passed into the uterus. July 12th, at 3, P.M., there had been no pains of any strength or regularity. The os was soft, admitting two fingers, lubricated with bloody mucus, the head of the child presenting. The patient was etherized and the os dilated by the hand with the greatest facility, the whole process of dilatation and delivery by version occupying less than ten minutes. The child, a boy, weighed eight and a half pounds, and got on very well. The mother recovered without an untoward symptom. At the present time the child is as strong as one born at full term.

Though the use of a bougie failed to bring on efficient labor pains, yet it seemed to be of service by its action upon the os uteri, as shown by the quite abundant secretion of mucus thoroughly tinged with blood,

and by the ease with which manual dilatation was accomplished. I should resort to its use in any case which did not call for immediate action.

The PRESIDENT said he had never found it necessary to use a bougie to prepare the cervix for manual dilatation, and never failed to accomplish dilatation with the fingers alone. The parts yield at intervals of from six to ten minutes, and from one to four hours would be ample time to open the cervix sufficiently to perform podalic version.

DR. REYNOLDS, while agreeing with the President as to the ease of manual dilatation in most instances, had seen cases in which the greatest difficulty was experienced. He queried whether venesection might not be advisable in cases of obstinate cervices.

DR. INGALLS thought that steel dilators should never be used to dilate a firm cervix, as they were liable to do harm: the fingers are much the best instruments.

DR. HOSMER recalled attention to a case[1] he had reported to the Society in June, in which he had been unable to dilate the cervix, and the patient, an eclamptic, died undelivered. He had never failed in this procedure before, and wished to cite his case as showing that digitable dilatation is not always so easy as is generally supposed.

DR. GREEN had seen two cases in which digital dilatation was extremely difficult. In one case, seen recently, he was obliged to deliver at the sixth month, on account of severe hæmorrhage from placenta prævia marginalis. The cervix would admit only one finger and had a hard cartilaginous feel: it was impossible to introduce a second finger far enough to be of any use, and after two hours of fruitless effort (there was no hæmorrhage at the time of operation) a Barnes' bag was used and by its means sufficient dilatation accomplished to make the use of two fingers possible. The cervix soon yielded thereto, and the uterus was emptied. While, therefore, he believed digital dilatation to be easily accomplished as a rule, there were certainly occasional exceptions.

A NEW PORTABLE CASE FOR GYNÆCOLOGICAL INSTRUMENTS.

DR. BAKER exhibited a convenient bag he had devised for containing gynæcological instruments. The bag opened down to the bottom like a valise: there was ample space for a case of bottles, for cotton tampons, pessaries, etc., and the instruments were conveniently and compactly disposed in the sides and flaps.

SPECIMEN OF ADHERENT PLACENTA.

DR. DRIVER, a guest, showed a placenta which had been adherent and was removed with the fingers: it was very thin in part, and in part very thick.

NEW YORK COUNTY MEDICAL ASSOCIATION.

STATED meeting, November 15, 1886.

DR. T. GAILLARD THOMAS read a paper on

LAPAROTOMY AS A DIAGNOSTIC RESOURCE.

During the last century, he said, medicine had been slowly but steadily rising from the lower level of the arts and gradually assuming its place among the sciences. Abstract opinions had become worthless, and facts capable of demonstration to our senses ruled the hour, and controlled professional thought. As this salutary change had developed, every observer must have been struck by the fact that one of its chief factors, and at the same time, to a certain degree, one of its direct results, had been the great development of the art of diagnosis accomplished by the subordination of theoretical methods of exploration and investigation to those which were purely physical.

Throughout the whole domain of surgery, there was no field in which diagnosis was more surrounded by difficulties than that of abdominal neoplasms. This was due to three facts; *first*, the superposition of the intestines; *second*, the great thickness to which the abdominal walls commonly attained; and, *third*, the accumulation of gases in the intestines, which increased all the pre-existing difficulties of exploration. Formerly, the diagnosis of abdominal tumors was allowed to rest upon deductions capable of being drawn from rational and physical methods, the latter of which were limited by the abdominal walls without and the pelvic roof within; but to-day, surgeons devoting themselves to this department of our art were fully agreed as to the propriety of opening the abdominal walls for the purpose of exploring the viscera fully by touch, and to a limited extent by sight.

It seemed to him that no more important era had of late years marked the advance of abdominal surgery, than the general recognition of the fact that when doubt exists as to the diagnosis of abdominal neoplasms or the significance of certain pathological conditions within the peritoneum, the question should be settled by explorative incision. Of the propriety of this practice there could be no possible doubt. After an experience yielded by seven or eight hundred cases, approximately, of laparotomy for various causes, extending over a period of twenty-three years, he felt sure that he could say with entire truth that he had never once regretted opening the abdomen, and that he had in a dozen cases, at least, deeply regretted having failed to do so. He thought it was certain that in the future explorative abdominal incision would become the rule in all cases of the following conditions which did not yield to medical means, and concerning the etiology of which there was great doubt; (1) wounds and injuries of the abdominal viscera; (2) intestinal obstructions; (3) the presence of stones in the gall-bladder or kidneys; (4) the accumulation of blood, pus or serous fluid from any cause; (5) the existence of a neoplasm in any part of the abdomen; (6) the occurrence of serious organic changes in certain of the viscera of the abdomen, such as the kidneys, the spleen, the uterus, the Fallopian tubes or the ovaries; (7) ectopic gestation.

Even under the most favorable circumstances, the most skilful diagnostician was constantly liable to make errors without its aid; and hence it was that explorative incision was peculiarly valuable. Dr. Thomas said he knew of no way in which he could better convey his views and give his experience upon this subject than by mentioning first, some cases in which he had to regret non-interference, and then relating others in which more active measures had produced happier results.

CASE I. About seventeen years ago, he was called in consultation to see a strong, healthy coachman, about twenty-five years of age, who had been suddenly seized with obstruction of the bowels, which had re-

[1] See Vol. CXV, No. 17, page 403 of this Journal.

sisted all medical means and was evidently going to result fatally. The question of laparotomy was carefully canvassed, and it was unfortunately decided not to perform it. The patient died, and on a post-mortem examination a loop of intestine was found constricted by a string of false membrane, the result probably of some long past peritonitis. This was apparent as soon as the abdomen was opened. It was the sole cause of the obstruction, and could at once have been overcome by the snip of a pair of scissors. At that time, however, laparotomy, had it failed, would have met with universal condemnation, and, said Dr. Thomas, "we probably lacked the moral courage to meet the issue, and let the poor fellow die, hoping against hope for a relief which became less and less likely to occur with every hour that elapsed."

CASE II, was that of a patient seen fifteen years ago in consultation with Dr. Otis, who suffered from a uterine fibroid which had grown to such a size that it filled the whole abdomen, and pressed so much upon the viscera under the diaphragm that it was evident that the patient would soon be exhausted unless the tumor was removed. The question of extirpation was carefully considered, and the decision left to Dr. Thomas. At that time the operation was very rarely performed, and still more rarely was it successful. He decided against operation, and the patient died. Upon autopsy a tumor weighing forty pounds was found entirely unattached in the peritoneal cavity and connected with the uterus by a pedicle not larger than two fingers placed side by side. Removal, therefore, would have been easy, and recovery probable; but influenced by the spirit of the times which frowned upon the removal of a large solid tumor of the abdomen, he hesitated to perform the operation. Here an exploratory incision would have made its practicability quite evident.

CASE III. In the early part of his experience as an ovariotomist, a lady suffering from a very large abdominal tumor called upon him with the statement that she had consulted the three most eminent operators living in this country at that time, that they had all agreed that the tumor was a solid one connected with the uterus; and that they all advised against operation. Dr. Thomas agreed with the opinions already expressed, and the patient went home. In about a year she died, and the autopsy showed that the neoplasm was a multilocular ovarian tumor, entirely free from adhesions, with a small pedicle, and which could have been removed with every prospect of success. The reasons for the obscurity of the diagnosis were the following: The tumor was composed of innumerable small cysts, the walls of which were thick and the fluid within them colloid.

CASE IV was another one of intestinal obstruction, occurring in a young Irishman, in which it was decided not to operate, and at the autopsy the following curious condition was found: the transverse colon at its middle was distended with hardened fæcal matter held in one indissoluble mass by a quantity of hay such as is fed to horses, which penetrated it in every way. It was certain that upon abdominal section this would have been readily discovered, and it was probable that by a process of kneading it could have been dislodged and pressed onwards towards the rectum. Dr. Thomas was never able to learn what had induced the man to swallow the hay.

CASE V was one which proved to be extra-uterine pregnancy. There were five physicians in consultation and the vote stood two in favor of exploratory laparotomy, and three opposed to it; Dr. Thomas being one of the two who advocated the procedure. The patient died, and upon post-mortem examination, a three months fœtus was found in the Fallopian tube at its fibriated extremity. The amniotic sac was unbroken, but a slight rent had occurred in the muscular covering of the sac which had opened an artery of sufficient size to cause death by hæmorrhage in the three days which elapsed between the inception of the accident and the fatal result.

Having remarked that he could mention still a number of other similar cases, did time permit, Dr. Thomas said that in his own defence, he would remind his hearers that almost all of this variety of his cases occurred fifteen or twenty years ago, and that this number of years, so rapid had been the recent advance of abdominal surgery, carried us back into the ancient history of the subject. Few such cases occurred to him now, for the very reason that he was a strong advocate for explorative incision as a diagnostic resource. He then proceeded to narrate a few out of the very large number of cases in his later experience, which illustrated the brilliant results which commonly attend upon this procedure.

CASE I. A patient was brought to him for abdominal dropsy, for which tapping had been repeatedly practised, and in whose pelvic cavity a solid tumor, the size of the adult head, could be distinctly felt. This was regarded as a large uterine fibroid, the presence of which had induced ascites, and the removal of which was regarded as entirely impracticable, on account of the weak and exhausted condition to which the patient had become reduced. Dr. Thomas proposed explorative incision, agreeing with the relatives that he would be governed by the light this shed upon the case as to his subsequent action. As soon as his hand passed into the abdomen, he found that the fluid was not the result of ascites, but was ovarian fluid, which poured forth from a ruptured ovarian cyst, which, in its collapsed state, now occupied the pelvic cavity, giving rise to the belief that it was a fibroid. The operation for the removal of the sac was an exceedingly simple one, and the patient made a rapid recovery.

The second case was one of hæmato-salpinx, in which the excessive distension of the Fallopian tubes gave rise to a sensation of solidity, which made the diagnosis before operation very obscure. Both tubes and their corresponding ovaries were removed, and the patient was entirely cured.

The third case was quoted as illustrating the fact that cases of abdominal tumor are sometimes utterly beyond the realm of diagnosis until the cavity is opened. For years this patient had had a firm tumor behind the uterus, when suddenly she became almost collapsed, and suffered greatly from pain in the tumor, which nearly doubled in size in a day or two. Laparotomy was performed, and a large blood-cyst was emptied from the distended pouch of Douglas, and he shelled out the skull of a fœtus of probably six months of intra-uterine life. The patient died ten days after the operation from cardiac thrombosis.

The fourth case was one of intestinal obstruction, caused, as was found on opening the abdomen, by a mass of malignant growth encircling a considerable portion of the large intestine. The patient died about a month after the operation.

There was one class of cases which, in his hands, Dr. Thomas said explorative incision had yielded particularly brilliant results, namely, cases of ascites in the female; and he directed a considerable portion of the paper to the discussion of this subject. He enumerated the causes of ascites as to frequency in the following order: (1) organic diseases of the liver; (2) chronic peritonitis; (3) tubercular peritonitis; (4) malarial spanæmia accompanying great splenic enlargement; (5) the existence of neoplasms within the peritoneal cavity; (6) the prolonged existence of excessive fæcal impaction. Some might doubt the last of these causes, but he had personal experience with it, which had perfectly convinced him of its etiological significance. Later, he went on to make the special point that some cases of excessive ascites, which, by repeated tappings, prove fatal, are due to insignificant uterine or ovarian tumors, which are too small for recognition unless specially and carefully looked for, and the removal of which relieves the fluid accumulation, which, by its exhausting influence, destroys life. These tumors were sometimes no larger than small apples, and could not be recognized, except by the careful examination of an expert. In stout women, or even in those that are thin, they could not be discovered after accumulation of ascitic fluid, even by a master in diagnosis. And, as he had had sufficient evidence in his experience, in some cases, even when a tumor in the pelvis as large as a cocoanut co-existed with the ascites, no connection between the two pathological conditions, as cause and effect, were ordinarily traced by the medical attendant. Should this be the case; should the existence of the neoplasm not be detected, or should the malign influence not be appreciated, even when its presence had been diagnosticated, the physician would probably endeavor to cause absorption by pressing into action the three emunctories of the body. This usually failed, and if it did not, the cause of the symptom remaining after the symptom itself had been removed, frequently repeated resort had to be had to the plan, which, in time, impaired nutrition and exhausted the vital energies.

If, on the other hand, tapping or aspiration were employed, the beginning of the end soon showed itself, and it became merely a question of time how long the system of the patient would bear the exhausting drain to which it was exposed. Dr. Thomas said he had met with a number of cases in which he had succeeded in completely curing aggravated cases of ascites, after tapping had been repeatedly resorted to, and after all hope of recovery had been given up. A few of these were as follows:

Case I. A lady from Connecticut had been repeatedly tapped for ascites, and was rapidly growing weaker from the drain upon her system. After each tapping, a round, hard tumor, about as large as the head of a five-year old child, could be readily detected in the pelvis, and this could also be obscurely felt, even when the dropsical effusion ceased. He opened the abdomen as an explorative procedure, and, finding a fibroid attached to the fundus uteri, removed it, with the effect of perfectly curing the patient.

Case II. A lady from Canada came to him with ascites, which was accompanied by the presence of a solid tumor over one ovary, as large as a cocoanut. She had been tapped once. He removed a solid tumor of the left ovary, and she entirely recovered, having now remained free from dropsy for two years.

Case III. About a year ago, a patient was sent to him suffering from ascites, in whom he could detect by vaginal touch what seemed to be a pelvic neoplasm. He made an explorative incision, found a tumor in Douglas's cul-de-sac, no larger than an apple, and removed it. It was found to be of a sarcomatous nature. The patient recovered from the operation and from the abdominal dropsy, but her physician in Connecticut had recently written to say that a hard tumor could now again be felt in the pelvis, and that ascites was beginning again to show itself. Dr. Thomas thought it highly probable that without removal of the malignant growth, the case would long ago have ended fatally.

Case IV was a counterpart of No. III, except that the post-uterine tumor was a benign fibroid, attached by a rather slender pedicle to the posterior wall of the uterus. It was very difficult — indeed, impossible — to say why, in a certain small number of cases, these tumors created ascites, while they so often occupied the peritoneal cavity for years without causing any such trouble whatever.

Case V. Some years ago he saw in consultation a lady who suffered from severe enteralgia which was caused by the presence of an ovarian cyst as large as the adult head, which was perfectly movable in the abdominal cavity. Fourteen years afterwards dropsy was caused by the nomadic tendencies of the growth, and the patient suffered much distress. Laparotomy was performed, and a monocyst of the ovary with the longest pedicle that he ever saw was removed. In connection with this case Dr. Thomas said that he had removed one ovarian tumor which had lasted twenty-four years, another which had lasted sixteen years, and another which had lasted nine years.

In view of the experience of these and similar cases he said that he felt justified in assuming the position that in cases of ascites in the female, before the patient was relegated to the usual practice of repeated tapping with its universally bad results as to cure, the most thorough investigation as to the possible existence of small neoplasms as important pathological factors should be made, and if signs of their existence were obtained, explorative incision should be practised as a "forlorn hope" that relief might be obtained.

There were but two points connected with exploratory incision which he wished to refer to before closing. The first was the singular fact that in certain cases of abdominal incision in which diagnosis alone was practicable, and others in which removal of the tubes and ovaries proved to be impossible, great improvement sometimes resulted to the patient's general and local condition from the explorative effort alone. The second point was the necessity for certain rules which should be observed in the performance of this simple surgical procedure. They are as follows:

(1) Every explorative incision should be made under the strictest antiseptic precautions. As to strict cleanliness, all are agreed; if antiseptics of chemical character are valueless, they at least, in all probability, do no harm. While the question as to their utility is still *sub judice*, give the patient the benefit of the doubt, and employ them.

(2) Always employ an anæsthetic.

(3) Always make an incision which will admit the whole hand; one which will admit two fingers only is hardly warrantable. If possible, let but one man's hand be passed into the abdominal cavity.

(4) Never hurry an explorative incision, but never prolong one unnecessarily. Let discussion as to diagnosis occur after the peritoneum is closed: not while it is open.

DISCUSSION.

DR. JOSEPH D. BRYANT said that the question of exploratory laparotomy was to his mind the most important one at the present time connected with the subject of abdominal surgery. The distinction should invariably be borne in mind between exploratory laparotomy and what he termed laparotomy in its entirety. He believed that exploratory laparotomy was justifiable in all cases in which the diagnosis was doubtful, but with this reservation, that the means should always be at hand for performing the operation in a proper manner as regards antiseptic precautions, hygienic surroundings, etc. Unless the operation was surrounded with proper safe-guards, there was great danger that discredit would be thrown upon it, and that it would be relegated to the low position which it occupied a few years ago.

During the late war, gun-shot wounds of the abdomen, under the expectant plan of treatment, showed, notwithstanding the many discouraging circumstances which attended them, a percentage of from five to seven recoveries. To-day in laparotomy performed in its entirety, (which included a thorough examination of the abdominal cavity and its contents, the suturing of the wounded intestines, the thorough cleansing of the cavity, and the closure of the wound), there was found to be a percentage of recoveries of no less than sixteen, a gain of more than half. These figures included not only the reported cases, but a considerable number which had come to his personal knowledge, but which had never been publicly placed on record. In the cases actually reported there were nearly twenty-five per cent. of recoveries.

DR. E. G. JANEWAY said that the part of the paper which particularly interested him was that which referred to certain diseases of the abdominal cavity. The question of laparotomy in medical cases was all the time coming more and more prominently before the profession. In peritonitis, however, the conditions were usually so unfavorable that it was impossible that the exploratory operation would be attended with very brilliant results. He said he became so impressed with the unfortunate results attending purely medical treatment in many cases of peritonitis, that in a case last spring he resolved to give the patient the benefit of the best surgical advice, and called Drs. W. T. Bull and Bryant in consultation. It was one in which there was no hope of recovery whatever, unless from operative procedure; and as this offered a possible chance (though the prospect was not by any means encouraging), it was resolved to perform laparotomy. This was accordingly done, but the patient unfortunately lived but for twelve hours afterward; the autopsy showing a perforation of the vermiform appendix. Still, he believed that the operation was justifiable, and he should recommend the same again in any case where the diagnosis could be made sufficiently early.

There was always more or less uncertainty, however, about the diagnosis in such cases, as was well illustrated in that of a physician which had come to his notice. This gentleman had already had attacks of what was apparently well-marked perityphilitis, when there was great pain and tenderness in the right iliac fossa; accompanied by a temperature of 104 lasting a week or ten days. Last, he had another such attack while in Boston, and laparotomy was performed there. Curiously enough, however, the exploration of the abdominal cavity revealed the fact that there was no assignable cause to be found for the trouble; though all the special symptoms regarded as characteristic of perityphilitis were present. Fortunately, the case terminated favorably, and now, at the end of five days after the operation, the patient was doing well.

In many cases of perforation of the intestines in typhoid fever he would be inclined to recommend the trial of laparotomy, if the condition were recognized (especially by the presence of hepatic resonance) sufficiently early; and one case of this kind with a favorable result had already been reported in Germany.

DR. IRA B. READ presented the specimens from a case of

RUPTURE OF AN ANEURISM OF THE THORACIC AORTA,

as a sequel to a paper read before the Association several months ago. The case then reported was one of double popliteal aneurism where both femoral arteries were successfully ligated, the one in June, 1882, and the other in February, 1883. It was consequently more than three and a half years since the last operation, and more than four years since the first. The patient while pursuing his usual avocations died suddenly on the afternoon of October 29th, and at the autopsy made the following day the pericardium was found filled with blood. On opening it the heart was found to be completely imbedded in a large clot of blood, and further search showed that there was a rupture of the ascending portion of the aorta, the orifice in the sac easily admitting the finger. There was, however, but little dilatation observed, and other parts of the aorta showed marked atheromatous degenerations; so that rupture would soon have occurred in some of these had not the point of rupture described proved the weakest.

DR. READ also exhibited a section of the femoral artery above and below the point of ligation. Below, the artery was occluded by what seemed to be an organized fibrous growth, while above, there was the ordinary appearance of the normal artery. Unfortunately, he said, he had never been able to examine the patient for abnormal heart-sounds or aneurismal bruits since the last operation; but at that time there were no physical signs of aortic aneurism.

He had not been able to find any probable cause for the arterial condition which existed in this case. The patient being a young man of thirty, apparently in full vigor, with no history of syphilis, either recent or remote, and not intemperate, he could only accept the fact that there was an atheromatous condition of the arteries which predisposed to aneurism and finally led to his death. The heart was normal in size, and the lungs and liver healthy in appearance; but the spleen and kidneys were very much enlarged.

DR. JANEWAY presented a specimen of

PERFORATION OF THE INTESTINE IN A CASE OF TYPHOID FEVER.

Peritonitis was present for two and a half days before death, but the usual features of the liver on percussion was not replaced by resonance sufficiently early to permit any possible hope from a resort to exploratory laparotomy. The gas in such cases sometimes escaped very slowly, and the difficulty in regard

to the operation was that, unless the liver flatness was lost and there was severe pain, we could not feel assured that peritonitis was present. Indeed, in all cases there was some degree of uncertainty, since instances of supposed perforation and peritonitis had been known to recover. In reality, however, they were cases of retinitis or of gastritis. Such cases, therefore, should make us hesitate to perform laparotomy unless the diagnosis were very clear.

President, DR. C. A. LEALE, presented a specimen of

FAHLBERG'S SACCHARINE.

This is a derivative of coal tar, and is said to be from 1,200 to 5,000 times as sweet as cane sugar. It is comparatively insoluble, and it is not known as yet whether it has any medicinal qualities or not.

Recent Literature.

First Annual Report of the State Board of Health and Vital Statistics of Pennsylvania. Harrisburgh, 1886.

This first report shows that the State Board of Health of Pennsylvania has at once taken its place as an active, efficient organization. The first portion of the report consists of an abstract of its proceedings up to Oct. 1, 1885, together with a catalogue of its library.

The appendices forms the second and larger portion of the report.

Appendix A contains the reports of the Standing Committees, chief among which is the report of the Committee on Water-Supply, Sewerage, and kindred topics. This report is entirely devoted to the subject of the pollution of the Schuylkill River, and contains a carefully compiled table of statistics as to the industries along the banks of the river.

Appendix B deals with the sanitary condition of certain cities, chiefly that of Harrisburg.

Appendix C contains reports on epidemics and sources of disease, and is especially valuable for its very full and minutely detailed account of the epidemic of typhoid fever at Plymouth. The number taken sick was 1,153, deaths 114, and the financial cost of the epidemic estimated at $97,120.25. Reports upon other epidemics of typhoid fever and also of small-pox made up the remainder of this appendix.

Appendix D consists mainly of reports of inspections of local nuisances, and of camp-grounds.

Appendix E contains the quarantine regulations of Philadelphia, and also a description of the disinfecting apparatus employed at the Municipal Hospital in that city. This consists of a fire-proof building containing a furnace with disinfecting chamber (8 by 11 feet) for dry heat, and a fumigating chamber (6 by 11 feet). Another incinerating furnace has been constructed for the destruction of such articles as are worthless, or could not be disinfected by other means. A small fee is charged for disinfection, to those who are able to pay for the process. Great care is taken, in the conveyance of infected articles by a properly constructed vehicle.

The remaining appendices, F and G, contain the regulations of the Board, its circulars, forms, and official correspondence.

The power conferred upon the Board by Section 7 of the Organic Act, making the Board the supervisor of registration is an important one, and if fully exercised will make the State a valuable contributor to the vital statistics of the nation.

Ninth Biennial Report of the State Board of Health of California. Sacramento. 1886.

The efficiency of the State Board was crippled for a season by the loss of three of its members. Its President, Dr. Gibbens, the Secretary, Dr. Hatch, and also Dr. Rowell, the two former by death, and the latter by resignation.

The State Board have endeavored to secure a Registration Law, but without avail. A bill providing for "the analysis of mineral waters, plants, food and drugs, and for the prevention of adulteration" was enacted, but no adequate provision was made for the compensation of the State Analyst authorized by the same act.

The total number of deaths reported to the Board for the year ending June 30, 1885, was 8,238, of which number 4,741 were males and 3,002 were females. The deaths from consumption were 1,227, or a slightly less rate than that of Massachusetts.

The report contains a detailed account of the indigent sick of the State, treated in the County Hospitals. A considerable portion of the report is devoted to climatological discussion, particularly of certain vallies, and of the sea-coast region.

Other papers follow upon Trichinosis, Quarantine, Yellow Fever, and the Influence of Alcohol upon the Human Family. The latter is clearly stated, but in the paragraphs upon the poisonous adulteration of liquors, does not agree with the results obtained by examination made upon the Atlantic coast.

The following statement on page 69, that in "Massachusetts three hundred and ninety-three thousand cases of typhoid fever, with forty thousand deaths, *have been traced* to specific contamination of drinking water," shows an amount of discrimination as to the causes of this disease, which even the most enthusiastic sanitarian would hardly have dreamed to exist.

The Private Treatment of the Insane as Single Patients. By EDWARD EAST, M.R.C.S., L.S.A. London: J. & A. Churchill. 1886. pp. 67.

There is little doubt that insane patients of the wealthy class, might, in many instances, be spared not a little pain, could the practicability of private non-asylum treatment be satisfactorily demonstrated to the general practitioner. The value of Dr. East's *brochure* lies in his successful endeavor to show the desirability of treating singly, certain acute cases of insanity in persons of means, in properly selected quarters away from home. Useful information is given as to the selection of cases. The number both of cases and forms of insanity which are here considered suitable for this kind of care is not excessive when it is remembered that the means for securing a suitable house, and proper attendance and medical supervision are supposed to be always available. The writer says much that is true, and more that is overstated regarding the disastrous influences of asylum surroundings. The disadvantages of the method advocated, however few they may be, might also have been weighed with its merits, without injuring the author's cause. As it is, he will hardly be credited with giving dispassionate and impartial advice. The number of the insane of this class, who are treated at home, is large enough to call for precise details for guidance in practice. In the dearth of such information, many of Dr. East's suggestions will be especially welcome.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, DECEMBER 9, 1886.

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RESEARCHES ON SNAKE-POISON.[1]

IT is a pleasure to study the new memoir in which Dr. Mitchell has continued the account of his work on snake venoms. He secured the fortunate collaboration of Professor Reichert, and the coöperation of several institutions and scientific men. The new researches have been executed with so great skill, the results are so important, and the presentation of the whole matter is so excellent that the memoir must at once be ranked a classic, and the many persons, who coöperated with the authors, are doubtless well pleased with the new knowledge they have helped to harvest.

The subject of snake-poisons has manifold interests. The naturalist seeking the possible history of the evolution of such a gift finds suggestiveness in the similarity of the venomous secretion to that of the salivary glands, and in the affinity of the toxic substances to the normal proteid constituents of the blood. The physiologist wonders over the unknown device by which the tissues producing a poison remain in contact with it and yet are unharmed, the puzzle here being really the same as with the stomach, which digests all tissues save its own. The toxicologists are struck by the dissimilarity of the action of this poison from all others, while the pathologists watch with surprise the rapid and remarkable alterations of the tissues as well as the violent functional disturbances produced by minimal doses of the venom. Best of all, the physician hopes from such studies to gain new resources for the relief of suffering.

The memoir, which is published in handsome quarto form by the Smithsonian Institution, is an admirable example of scientific thoroughness and intelligence. The facts are presented without waste of phrases, in a natural sequence. Each assertion is confirmed by a careful statement of the character and number of experiments made, and the direct observations are clearly given as such; the interpretation is always presented separately. The expressions employed are exact, clear, and definite, and scarce a word is said not justified by the data at command. An occasional remissness may be noted, but no slip of consequence. We cite one flaw, which will illustrate the degree of error to be detected here and there. On page 5 the authors say: "nor can the venom of one kind of snake be distinguished with certainty by any physical peculiarity from that of any other, however remote they may be in the scale of being." The sentence implies that the authors know exhaustively all the physical peculiarities of all snakes, which of course they never meant to say. Nothing shows better the degree of merit of a writing than the faults we find in it. An honest use of adjectives designates a fault, such as we have given an example of, as small.

The essay by Dr. Mitchell and Dr. Reichert deserves praise not only for its display of that care and accuracy, which comes from good training and an appreciation of the requirements of scientific research, but also for the quality of thought, which is an ability and not an acquisition by education. We are glad to point to such an excellent essay as an example of American scientific culture. And as we look at the formidable bibliography of their subject given by the authors we are happy to think that there is one more paper, which is not mentioned in the list, but which contains the best of what has yet been done.

The paper may be best described as giving, first, an account of the poisonous globulins and poisonous peptones of the venom from a chemical standpoint; second, an account of the effects upon the living organism of the venom, and of each of its poisonous constituents.

The venoms bear a strong resemblance in some respects to the saliva of other vertebrates. The active principles of the venom are contained in its liquid parts only. The solid constituents are harmless. The venom may be dried and preserved indefinitely in this condition, with but very slight impairment of its toxicity. It will also keep dissolved in glycerine, probably for any length of time. It contains representatives of two classes of proteids, *globulins* and *peptones*, which are the toxic elements. During the intervals of digestion, the poison may be absorbed by the stomach in fatal quantities.

The poison exerts a powerful local effect upon the living tissues, and produces more rapid necrotic changes than any known substance. It causes œdema, swelling, attended with darkening of parts by infiltration of incoagulable blood, breaking down of tissues, putrefaction, and sloughing. It renders the blood incoagulable. When brought in contact with a vascular tissue of a warm-blooded animal, it produces such a change in the capillary bloodvessels that their walls are unable to resist the normal blood-pressure, thus allowing the blood-corpuscles to escape into the tissues. These lesions are, however, not analogous to those of inflammation, since, in the latter process, it is principally the white corpuscles which emigrate from the blood, and the blood is highly coagulable, while here

[1] By Dr. S. Weir Mitchell and Dr. E. T. Reichert. Published by the Smithsonian Institute.

the blood exudes *en masse*, and coagulates with difficulty, if at all. The action upon the red blood-globules is remarkable. These bodies undergo substantial modifications, that is, they lose their bi-concave shape, become spherical and softened, and fuse together into irregular masses, acting like soft, elastic, colloid material. Except as concerns the paralysis of the respiratory centres, the action upon the nervous system is of but little importance. Certain alterations in the blood-pressure and pulse-rate and in the respiratory movements have been determined, but seem to be subsidiary.

Death in venom-poisoning may occur through paralysis of the respiratory centres, paralysis of the heart, hæmorrhages in the medulla, or possibly through the inability of the profoundly-altered red blood-globules to perform their functions. There can be no question, however, that the respiratory centres are the parts of the system most vulnerable to venom, and that death is commonly due to their paralysis.

The fact that the active principles of venom are proteids, and closely related chemically to elements normally existing in the blood, renders almost hopeless the search for a chemical antidote which can prove available after the poison has reached the circulation, since it is obvious that we cannot expect to discover any substance, which, when placed in the blood, will destroy the deadly principles of venom without inducing a similar destruction of vital components in the circulating fluid. The outlook then for an antidote against venom, which may be available after the absorption of the poison, lies clearly in the direction of a physiological antagonist, or, in other words, of a substance which will oppose the actions of venom upon the most vulnerable parts of the system. The activities of venoms are, however, manifested in such diverse ways, and so profoundly and rapidly, that it does not seem probable that we shall ever discover an agent which will be capable, at the same time, of acting efficiently in counteracting all the terrible energies of these poisons.

The best treatment is a prompt application of a local antidote. Of the generally available local antidotes, the most promising are potassic permanganate, ferric chloride, and tincture of iodine.

Travellers among the Bushmen in South Africa report that they are in the habit of using the dried poison-sac of one snake as an antidote to the poisonous effects of the bite of a different species of reptile; and experience has taught them to rely so thoroughly upon the success of such an application that they do not fear the bite of any snake, however poisonous, if provided with such an antidote. The poison-sacs being reduced to powder are rubbed into the bite or into the incisions around it.

Among some tribes of the Bushmen an even greater power as an antidote is attributed to a small saurian called by them "N'auboo." This little lizard is dried and then powdered, and is rubbed into incisions around the bite of the poisonous snake. Whether with man or beast, this application is held in the highest esteem by the natives, and the observations of several travellers tend to confirm the statements of the natives as to the antidotal power of these poison-sacs and lizards.

An investigation of such claims by so competent an authority as Dr. Mitchell would be of interest.

ON THE TREATMENT OF RETRO-DEVIATIONS OF THE UTERUS.

AT the meeting of German Naturalists and Physicians recently held in Berlin, Professor Fraenkel, of Breslau, read a paper on retro-deviations of the uterus, in which he embodied the results of his gynæcological experience with these misplacements, for the past four years, or since the Thomas retroversion pessary has come into vogue in Germany.

Since October, 1882, Fraenkel has treated 5,180 persons suffering from gynæcological affections; of these, 936 or 18.07 per cent., were cases of retro-deviation, that is, 645 retroflexions and 291 retroversions; the latter figure as contrasted with the number of retroflexions, proves, so Fraenkel says, the inaccuracy of Bantock's statement that retroversion is the most frequent form of retro-deviation. Of these 936 cases of retro-deviation, 417 were patients seen in private practice, and 519 were out-door patients, treated at the polyclinic; the latter class belonged to the lower walks of life, were women who for the most part, had undergone frequent pregnancies, were obliged to work hard, and had lacked the proper care during their confinements; these causes, coupled with habitual lack of suitable nourishment and rest, being fruitful in uterine misplacements, and especially retro-deviations.

In forming a judgment as to the frequency and permanence of a cure in these misplacements, Fraenkel was obliged to rely on the 417 cases in private practice, not being able to follow out the results of the treatment of the out-door patients. Of these 417 patients, 123 were cases where the uterus was irreducible, where no mechanical treatment was necessary, or where the patient was subsequently lost sight of; only 294 cases were left for a fair trial of the value of mechanical support.

The first step in the treatment was of course, to rectify the retro-deviation; this Fraenkel was generally able to accomplish with the hand alone, the patient being in the knee-elbow position; in only 23 cases was he obliged to make use of the sound to straighten out the uterus. In 47 cases he was compelled to call in the aid of an anæsthetic. The only pessary which Fraenkel has used for the past four years is the Thomas pessary, which, he thinks, is sure to retain the uterus in its normal position, keeps clean, and may be worn six months or more without being changed. Another advantage of this pessary is that it allows sexual connection as well as conception; it is, moreover, sufficiently flexible, may be moulded into

any shape to fit the pelvis, and renders possible a permanent cure.

It is hardly necessary to say that retroflexion of the uterus entails sterility, absolute or relative. Retroflexion of the gravid uterus demands only an expectant treatment — provided that symptoms dependent on stasis, or compression of the uterus or neighboring viscera do not exist. The gravid uterus in retroflexion often spontaneously straightens itself as that organ rises out of the pelvis; it is not true, however, according to Fraenkel, that pregnancy cures the retro-deviation, which is almost sure to return after the accouchement. To prevent this, he advises in cases liable to this accident, the application of a large Hodge pessary the eighth or ninth day after confinement.

Of the 294 cases which Fraenkel has treated with the Thomas pessary, there are, he says, 24 in which there is no doubt as to an absolute and permanent cure. These patients have been continually under his observation. The average time during which the pessary was worn was a year; the maximum was 2¼ years, the minimum 2¼ and 3 months. He has no doubt that this ratio of 8.1 per cent. of permanently cured will be greatly increased as observations are continued.

"Despite all," says Fraenkel, "it must be confessed that every kind of pessary is an inconvenience. It is for this reason that gynæcologists have sought to cure the retro-deviation by surgical means. Hence it is that in 1884 Alexander Adam proposed his brilliant operation of shortening the round ligaments. According to the statistics of Doleris this operation has now been performed 118 times; in one-fourth of these cases for prolapses, in the other three-fourths for retro-deviation. Of these patients, three died from the operation, fourteen were without result, and in many of them a pessary became again necessary afterwards. The indications for the Alexander-Adam operation are still uncertain; in general they are said to be: the existence of a retroverted or retroflexed uterus, with descent of the ovaries which are tumefied and too sensitive to tolerate a pessary. Obesity and muscular atrophy in aged women render the operation more difficult, the round ligaments being hard to find, and in these cases the operation may be followed by an inguinal hernia.

"The period of observation is still too short to decide as to the definite success of this operation. In some instances, eight to twelve months after the operation, the result was quite satisfactory. From principle, however, we ought to decline the operation, because there have been cases of death, and because we ought not to hazard the lives of our patients to cure an affection which in no way menaces their existence.

"The failure of the operation depends on the fact that due regard is not had to the causes of the retro-deviation, or the prolapses. Shortening of the round ligaments does not always cause a retro-deviation to disappear, for either these ligaments again relax, or the shortening is such that a permanent pathological anteversion takes place, causing no less trouble to the patient than the previous retroversion.

"Is the descent of the ovaries an indication for the Alexander-Adam operation? I reply in the negative. If the prolapsed ovaries are movable, they may be reduced with the uterus, and are tributary to a mechanical treatment by the pessary; if they are adherent, very sensitive, and if they give rise to reflex neuralgias, it is better to perform castration, and to treat at the same time the retroflexion after the method of Schrœder, by attaching the broad ligament of the uterus (which must be put into a position of anteversion) in the inferior angle of the abdominal wound, and causing it to become adherent thereto. I know of but one indication for the Alexander-Adam operation, namely, grave prolapses, with retroflexion, or laceration of the cervix."

In the discussion which followed the reading of this paper, Kuestner, Hofmeir, Czerny, Viet, Frank, Schwarz, and Martin took part, approving in general of the views of Fraenkel above epitomized.

THE GASTRONOMIC VALUE OF ODORS.

UNDER this head, Mr. Henry T. Finck writes an interesting article in the *Contemporary Review*. Instead of agreeing with Kant that smell "is the least grateful and indispensable of the senses, and that it is not worth while to cultivate it" he affirms "that a better knowledge of the facts compels us to urge that it is of the utmost importance that this sense should be cultivated and its gastronomic function universally recognized." "Were this done," he adds, "the average health and happiness of the community would be increased twenty per cent. or more. For it is no exaggeration to say that not one cook in a hundred knows how to cook, nor one person in a hundred how to eat."

In explaining why cooking and eating are arts in which practice has made few experts, he says that it has not been made sufficiently plain that everything in these arts depends on the sense of smell. He regards the proper object of cookery "to preserve and develop the countless delicious perfumes latent in the raw material of food, or to add others where the food is deficient in natural flavor;" and that the object of rational dining is to enjoy these gastronomic perfumes as intensely and as long as possible, on account of the advantages resulting therefrom to health and happiness."

Mr. Finck repudiates the notion that the indulgence of taste "is an ignoble sense of pleasure," as an echo of mediæval asceticism. The secret of the vitality and vigor of genuine epicures, he says, is because they live on the quintessence of food, which escapes most people. Now such epicures are generally hale and manly fellows, and jovial companions. They enjoy the full fragrance of every morsel they eat, by constantly breathing through their nose. There are two ways in which the efforts to extract all its fragrance from a morsel of food benefits the epicure: (1) To make the sensation one of "linked sweetness long drawn out," it is necessary to keep the morsel in the mouth as long as possible. Now the habit of eating slowly, is of the utmost importance if the organs of digestion are to be kept in a healthy condition. Mr. Finck repeats as probable a suggestion that Mr. Gladstone owes his remarkable physical vigor to certain rules of chewing food which he adopted in 1848, and to which he has adhered ever since: "he laid down as a rule for himself and children that thirty-two bites should be given to each mouthful of meat, and a somewhat less number to bread, fish, etc."

(2) A second and direct advantage resulting from an effort to get at the fragrant odors of food, he thinks, results from the value of these odors, when agreeable, in stimulating the flow of saliva and other alimentary

juices, thus making it sure that the food eaten will be thoroughly utilized in renovating the system. "This stimulating effect of gastronomic odors also explains the French saying that the appetite comes while eating, as well as our habit of reserving sweetmeats, nuts, cheese, etc., for the end of a meal, when rich odors are needed to brace up the flagging appetite. So great and salubrious is the effect of gastronomic odors in stimulating all the glands and functions of the body, that a dinner of savory, fragrant courses may produce in the diner a feeling of warmth and exhilaration, resembling the effects of wine, but with none of the depressing after effects following excessive indulgence in that liquor."

From an olfactory point of view this writer divides agreeable elements into two classes; those which are more fragrant externally, and those which develop superior odors after they are crushed by the teeth or tongue. Strawberries, apples, peaches, have a more refined and flower-like fragrance before they are put in the mouth than after. Cheeses, on the other hand, are not generally regarded as fragrant till they are being eaten. "The odor of Limburger is insupportable to many who, after they have courageously smuggled it past the nasal fortress find it very appetizing and good." The disagreeable external odor is neutralized by the fragrance which is set free as the cheese is crushed in the mouth.

Reference is made to Sir Henry Thompson's book on "Food and Feeding," which speaks of the appetizing odors of fresh meat and vegetables discerned in the national soup of France. He objects to the dried and compressed vegetables so much used at present, because "all the finest qualities of scent and flavor, with some of the fresh juices, are lost in the drying process." In braising, or rational stewing, the meat "becomes impregnated with the odors and flavors of fresh vegetables and sweet herbs." In roasting and broiling, the essential thing is to expose the meat to great heat at the very beginning, so as to coagulate the albumen and prevent the juices and aroma from escaping; then it must be finished under a lower temperature. "Frying, too, which is commonly decried as a barbarous method of cooking, because the dishes are apt to be soaked with unpalatable fat, becomes a valuable culinary method, if the lard is heated to about 400°, for then the object plunged into it is immediately surrounded with a delicious crust, which keeps out the fat, while it keeps *in* the juice and flavor."

In answering the question why dark meats are considered more dainty than white, Mr. Finck replies that it is because the natural aroma is always richer in dark meats. It also explains why the professional gourmand prefers game to poultry, for, in game, all the meat is dark and savory, that is, fragrant, because birds lead a more active life than domestic fowl, which have only dark meat on those limbs that are actively exercised.

In drinking wine, the most important thing, he says, to remember is that its essence, its soul, lies in the perfume or "bouquet." On this bouquet the commercial or gastronomic value of wines depend almost entirely.

Old wines, as a rule, are best, because age mellows their tartness, and intensifies their perfume. "Wine, unlike beer, should always be sipped, and the smaller the quantity taken at a time, the more delicious will be the fragrance."

Mr. Finck's article contains many sound dietetic hints, mixed with a certain amount of amusing gastronomic dilettanteism. If the attainment of remarkable physical vigor by the average American family depends upon the adoption of the rules for mastication attributed to Mr. Gladstone, we fear the digestive millenium for this nation is far removed. The man who counts the "bites" expended upon each article of food is a physiological prig, and there is no surer way of checking the natural functions of a gland than concentrating the mind too closely upon it.

MEDICAL NOTES.

— *Science* makes the somewhat astonishing announcement to its readers of "a new treatment for consumption consisting in the inhalation of *bacteria in the form of spray.*"

— A recent presidential decree in France, says *Science*, regulates the instruction in gymnastics in the *lycées* and colleges for girls. The instruction must be given by female teachers, who must have received a certificate of aptitude from the proper authorities. Such teachers are to receive from 1,200 to 2,000 francs per year each, and may be required to teach sixteen hours a week. They must teach at least twelve hours a week.

BOSTON.

— As an example of enterprise in business, the following clauses from the announcement of a pharmaceutical firm recently established are certainly suggestive: In addition to the ordinary duties of the druggist, it is here proposed to examine the *indications* of the prescription, and to choose a quality of articles in its composition which will or will not (apparently) produce "decided effects."

"Squibb's preparations will be used in all prescriptions where minute accuracy of dose, and decided effects of the remedies are indicated. *Confidential*— Great reduction in price will be made on all prescriptions, but more particularly on those marked P. — poor, and V. P. — very poor. On physician's orders marked "self," for *anything* in our store (to be used by himself and family), *very* low prices will be made."

NEW YORK.

— Dr. Valentine Mott has been making a series of preventive inoculations in the case of two sons and an office-boy of Dr. T. W. Foster, of Yazoo County, Miss., who was bitten by a rabid dog on the third of November. Immediately afterwards Dr. Foster left home with the intention of taking the boys to Paris to be

treated by Pasteur; but learning, on his arrival in New York, that Dr. Mott was provided with proper material for inoculating, which had originally been obtained from Pasteur, he decided to have the treatment carried out here. The process has now been completed, and the children, who suffered no inconvenience from the inoculations, are all in good condition. The young son of Dr. Nowell, of Jersey City, who was bitten by a dog supposed to be rabid, in June last, and afterwards subjected to the Pasteur treatment at the hands of Dr. Mott, continues well up to the present time. In his case the inoculations were discontinued after four had been made, as the boy exhibited certain distressing cardiac and respiratory symptoms for a short time after each inoculation, and his father was unwilling to have the treatment continued any longer.

— It has been ascertained that false-registering lactometers, marked as authorized by the Board of Health, have been sold to certain milk dealers, and a firm on College Place is to be prosecuted by the Board for their manufacture.

— Diphtheria of a fatal type has become increasingly prevalent of late. Among its victims a short time since, were three children of Dr. John Clausnitzen, a German physician living on Bleecker Street, and it is supposed they contracted the disease at the public school which they attended; an inspection by the Health Department revealing the existence of several sanitary defects about the building.

Correspondence.

COLOR-BLINDNESS AMONG APPLICANTS FOR THE NAVY.

BOSTON, 15 Chestnut Street, December 3, 1886.

MR. EDITOR,—The report of the Surgeon-General of the United States Navy states that "of the whole number of persons examined for enlistment during the year, 10,913, 79 were rejected for color-blindness, or feeble color-sense, 7.2+ per 1000 examined." This may be misunderstood, and it supposed that the medical officers of the navy could not detect the *four per cent.* always found among males. I have authority for stating that the seventy-nine were the defective among those only who were tested as to their color-sense. The report does not, unfortunately, say how many these latter were. Many applicants are turned aside at once for other cause, and their vision not examined. Dr. Gunnell, the present Surgeon-General, *now* requires the whole examination to be gone through with in every case, from which we shall have some valuable scientific data.

The report also states that during the last four years, out of 495 applicants for the Naval Academy, *eight* have been rejected on account of defective color-sense. Now all these applicants had been recommended by members of Congress, etc., and supposed to have been examined by some medical man as to their physical fitness, as is usual. This enforces my letter to the JOURNAL of April 29th, 1886, on "Physical Examinations of Candidates for the United States Naval and Military Academies," in which I warn medical gentlemen examining candidates at the request of members of Congress.

Respectfully yours,
B. JOY JEFFRIES, M.D.,

CALCULI. THEIR ALLEGED "SPONTANEOUS" FRACTURE.[1]

BOSTON, December 4, 1886.

MR. EDITOR, — Friable stones are no doubt broken by the contractions of a thickened bladder, much as English walnuts are in the hand. In the Harvard Medical School Museum there was a mass of little calculi from a patient, I think of the late Dr. Gay, which I supposed to have been so comminuted. There may be other causes of "spontaneous fracture," but this is probably a common one.

Very truly yours, H. J. B.

NEW YORK SKIN AND CANCER HOSPITAL.

NEW YORK, December 4, 1886.

MR. EDITOR, — It will interest many of your readers to learn that the New York Skin and Cancer Hospital, 243 East 34th Street, New York, and its country branch at Fordham, Westchester County, N. Y., have been for some time, and are now, ready for the admission of patients from this and other States. Applications may be directed to the undersigned Secretary of the Medical Board.

Yours very respectfully,

A. JACOBI, M.D., *Pres. Med. Board.*
L. D. BULKLEY, M.D., 4 East 37th St., N. Y., *Sec. Med. Board.*

REGULATION OF THE PRACTICE OF MEDICINE.

LEAVENWORTH, Kansas, November 27, 1886.

MR. EDITOR, — Pinon salve is the name of a remedy prepared by Dr. (?) Fowler of this city and his son in Kansas City, Mo., who claim to have derived their medical knowledge and skill from the Indians and from nature. The "*Doctor*" says other physicians don't like to have him practice because he has no "*diplomy*," but he uses only herbs and no minerals, therefore he thinks he is justified in treating patients, and does so, relying mainly on his cure-all "Pinon Salve." Whether there is any necessity for enacting laws and enforcing them to regulate the practice of medicine I leave to your judgment, after reading the following testimony given by the "*Doctor*" and a girl living in the house with one of his patients, named Carrie Carter, before the coroner in an investigation as to the cause of Miss Carter's death. I append the evidence copied verbatim from the coroner's records.

Very truly yours, W. D. BIDWELL, M.D.

Maria Johnson, being sworn, says, "I live here with the deceased and others. She complained about one o'clock on the night of the 23d inst. of cramps all over her body. I gave her red-pepper tea. It had no effect on her. When morning came, I went for Dr. Fowler, and he came at ten o'clock. The deceased was still in pain. He then gave her the half of a dose of morphine he had in a spoon of water, and *in ten minutes* he gave her the other half. Then she went to sleep, and soon waking, she complained of an itching and a hurting in her face. She then fell asleep, and we woke her once. She opened her eyes, and went to sleep again, and died at half-past eight last evening. She was subject to inward pains, and suffered in her limbs from rheumatism. Her breathing was hard and rapid before she died." MARIA JOHNSON.

George Fowler, being sworn, states, "I am a practising physician, and was called on the 24th of this month to see and prescribe for a girl named Carrie Carter, corner of Dakota and Third in this city. On my arrival, I found her suffering from a severe attack of bilious colic. I gave her *five grains of morphine* in two doses, half an hour intervening between the two doses. In my judgment, from the symptoms she manifested she was *struck with death* when I arrived, her under jaw falling down, and her eyes rolling back, leaving nothing but the whites to be seen. Her

[1] See Journal, Dec. 2d.

pulse had moved up towards her elbow, which, in my opinion, is a strong indication of approaching death. I observed the first dose of morphine had no effect in allaying the pain, and in fifteen minutes after taking the second dose, she gradually got into a case of stupor. I then made an examination externally of her abdomen, and found small lumps over the surface of her bowels, and to the best of my opinion, the pain and spasms accrued from these lumps. I then left the house, but returned between two and three o'clock, and found her sleeping, breathing very hard. Next morning I again called, and she was dead. *I do not think five grains of morphine was too much when divided into two parts, half an hour intervening between the doses.* Some time ago I gave her sister, Mrs. Richardson, *six grains of morphine*, and it had the effect of only making her drowsy. I generally buy my medicine at Aller's drug store, and use very little of it."

Attest, GEORGE FOWLER. JOHN C. LYNCH, *Coroner.*

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 27, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Diph. & Croup.	Measles.
New York	1,439,039	715	291	20.93	14.82	1.82	9.10	5.85
Philadelphia	971,363	404	136	16.25	4.75	2.25	8.50	—
Brooklyn	690,000	307	109	19.80	13.20	1.65	11.22	.33
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	164	50	12.81	14.03	1.83	4.27	1.22
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	127	42	18.96	20.64	—	12.64	—
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans	238,000	140	48	13.49	12.07	2.84	3.55	.71
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	87	29	23.80	5.95	—	15.47	—
Pittsburgh	190,000	74	40	43.20	8.10	4.05	13.50	12 15
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	14	4	28.56	21.42	—	7.14	7.14
Charleston	60,145	44	17	9.08	18 16	—	4.54	—
Worcester	68,383	16	7	12.50	25.00	—	6.25	—
Lowell	64,051	21	12	28.56	14.28	—	19.04	—
Cambridge	59,660	26	8	19.25	7.70	—	11.55	—
Fall River	56,863	25	16	12.00	12.00	—	12.00	—
Lynn	45,861	14	3	14.28	21.42	7.14	7.14	—
Lawrence	38,825	11	2	—	9.09	—	—	—
Springfield	37,577	8	1	12.50	25.00	—	12.50	—
New Bedford	33,393	12	1	8.33	25.00	—	—	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	9	2	11.11	11.11	—	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	3	0	—	—	—	—	—
Taunton	23,674	9	—	11.11	11.11	—	—	—
Haverhill	21,795	8	1	25.00	—	—	—	—
Gloucester	21,713	7	2	57.12	28.56	—	57.12	—
Brockton	20,783	—	—	—	—	—	—	—
Newton	19,759	5	1	—	20.00	—	20.00	—
Malden	16,407	—	—	20.00	—	—	—	—
Fitchburg	15,375	2	1	—	50.00	—	—	—
Waltham	14,609	0	0	—	—	—	—	—
Newburyport	13,716	4	0	—	25.00	—	—	—
Northampton	12,896	8	4	25.00	12.50	—	25.00	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,264: under five years of age 827: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 441, lung diseases 303, consumption 200, diphtheria and croup 202, measles 59, diarrhœal diseases 52, typhoid fever 51, malarial fever 31, scarlet fever 20, whooping-cough 10, cerebro-spinal meningitis seven, puerperal fever five, erysipelas four. From typhoid fever, Philadelphia 13, New York 10, Baltimore six, Brooklyn and Boston five each, District of Columbia three, Pittsburgh and Cambridge two each, Charleston, New Bedford, Salem, Taunton and Haverhill one each. From malarial fevers, New York 10, Brooklyn six, New Orleans seven, Philadelphia four, Baltimore, District of Columbia, Nashville and Charleston one each. From scarlet fever, Brooklyn six, New York four, Philadelphia three, Pittsburgh four, Boston two, Baltimore one. From whooping-cough New York and Pittsburgh three each, Brooklyn, Boston, New Orleans and District of Columbia one each. From cerebro-spinal meningitis, New York four, Lowell two, Nashville one. From puerperal fever, Philadelphia two, Brooklyn, Boston and Worcester one each. From erysipelas, New York, Brooklyn, New Orleans and Pittsburgh one each. One case of small-pox reported in Pittsburgh.

In the 19 cities and greater towns of Massachusetts, with a population of 983,791 (population of the State 1,941,465), the total death-rate for the week was 19.03 against 16.64 and 19.33 for the two preceding weeks.

In the 28 greater towns of England and Wales with an estimated population of 9,093,817, for the week ending November 6th, the death-rate was 18 2. Deaths reported 3,172: infants under one year of age 793; acute diseases of the respiratory organs (London) 293, diarrhœa 102, scarlet fever 74, measles 66, fever 52, whooping-cough 42, diphtheria 32.

The death-rates ranged from 11.9 in Derby to 28.0 in Wolverhampton; Birkenhead 14.2; Birmingtom 15.0; Huddersfield 21.2; Hull 17.2; Leeds 23.2; Leicester 16.8; Liverpool 19.8; London 16.7; Manchester 24.5; Nottingham 14.6; Sheffield 20.1; Sunderland 15.6.

In Edinburgh 24.8; Glasgow 24.1; Dublin 26.2.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending November 13th the death-rate was 19.5. Deaths reported 3,407: infants under one year of age 886; acute diseases of the respiratory organs (London) 321, scarlet fever 91, measles 81, diarrhœa 80, fever 69, diphtheria 36, whooping-cough 44.

The death-rates ranged from 13.9 in Brighton to 30.0 in Oldham; Birmingham 18.1; Bradford 17.4; Hull 20.7; Leeds 21.7; Leicester 17.6; Liverpool 23.8; London 17.9; Manchester 23.8; Nottingham 19.2; Sheffield 17.3.

In Edinburgh 21.1; Glasgow 23.4; Dublin 23.6.

For the week ending November 13th, in the Swiss towns, there were 32 deaths from consumption, lung diseases 16, diarrhœal diseases nine, diphtheria and croup four, measles two, whooping-cough two, puerperal fever two, typhoid fever one.

The death-rates were: at Zurich 9.5; Geneva 21.1; Basle 21.5; Berne 17.7.

The meteorological record for the week ending November 27, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Nov. 27, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, ...21	29.971	41.0	49.1	37.0	76.0	55.0	65.0	65.3	W.	N.W.	N.W.	12	13	4	C.	F.	C.	—	—
Monday, ...22	30.135	39.9	46.6	32.1	81.0	40.0	45.0	55.3	W.	N.W.	N.E.	7	10	2	C.	C.	O.	—	—
Tuesday, ..23	29.681	49.9	59.8	36.1	79.0	99.0	90.0	89.3	S.E.	S.	S.W.	13	7	16	R.	R.	O.	—	—
Wednes.. 24	29.713	45.2	63.3	36.2	75.0	60.0	62.0	66.3	W.	N.W.	W.	12	24	10	C.	C.	C.	—	—
Thursday, 25	29.788	37.4	39.8	34.2	64.0	83.0	100.0	82.3	W.	E.	N.	6	9	6	O.	R.	R.	—	—
Friday, ...26	30.103	34.7	39.5	31.5	71.0	57.0	74.0	67.3	W.	N.W.	W.	20	21	9	C.	F.	C.	—	—
Saturday, 27	30.257	32.5	40.3	26.5	82.0	48.0	69.0	66.3	W.	W.	W.	8	11	6	C.	C.	C.	33.	1.00
Mean, the Week.	29.958	40.1	48.3	33.4				70.3											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 27, 1886, TO DECEMBER 3, 1886.

CALDWELL, DANIEL G., major and surgeon. Granted twenty days extension of his leave of absence. S. O. 278, A. G. O., December 1, 1886.

MOSELEY, E. B., captain and assistant surgeon. Relieved from duty as attending surgeon in San Francisco, Cal. S. O. 99, Division of the Pacific, November 19, 1886.

MOSELEY, EDWARD B., captain and assistant surgeon. Directed to take charge of the medical purveying depot, San Francisco, Cal., until the arrival of a proper bonded officer. S. O. 99, Division of the Pacific, November 19, 1886.

TESSON, LOUIS S., captain and assistant surgeon. Granted leave of absence for four months, to date from November 13, 1886. S. O. 278, A. G. O., December 1, 1886.

EGAN, PETER R., first lieutenant and assistant surgeon. Assigned to duty at Fort Clark, Tex. S. O. 162, Department of Texas, November 22, 1886.

WAKEMAN, WM. J., first lieutenant and assistant surgeon. Leave of absence extended three months. S. O. 274, A. G. O., November 26, 1886.

MCCAW, W. D., first lieutenant and assistant surgeon. Granted leave of absence for two months, to take effect when his services can be spared. S. O. 274, A. G. O., November 26, 1886.

ANDERSON, C. L. G., first lieutenant and assistant surgeon. (Recently appointed). Ordered for assignment in Department of Arizona. S. O. 277, A. G. O., November 30, 1886.

BALL, ROBERT R., first lieutenant and assistant surgeon. (Recently appointed.) Ordered for duty in Department of the Missouri. S. O. 278, A. G. O., December 1, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING DECEMBER 4, 1886.

FARNELL, W. G., surgeon. Detached from the "Kearsarge," proceed home and wait orders.

GATEWOOD, J. D., passed assistant surgeon. Detached from the "Kearsarge," proceed home and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING NOVEMBER 27, 1886.

WILLIAMS, L. L., assistant surgeon. Granted leave of absence for twenty-four days, to take effect when relieved, November 15, 1886.

MCINTOSH, W. P., assistant surgeon. Granted leave of absence for twenty-seven days, November 26, 1886.

NORMAN, SEATON, assistant surgeon. When relieved to rejoin station (New York); granted leave of absence for twenty-three days, November 27, 1886.

APPOINTMENT.

Dr. W. L. Munro, of Providence, has been appointed Surgeon to Out-patients at the Rhode Island Hospital.

SOCIETY NOTICES.

RHODE ISLAND MEDICAL SOCIETY. — A regular quarterly meeting of the Rhode Island Medical Society will be held in Lyceum Hall, 62 Westminster Street Providence, on Thursday, December 16, 1886, at 10 o'clock, A.M. Papers by Drs. W. R. White, F. P. Capron, and C. V. Chapin.

G. D. HERSEY, *Secretary.*

SUFFOLK DISTRICT MEDICAL SOCIETY. OBSTETRIC AND GYNÆCOLOGICAL SECTION. — There will be a meeting of this Section at the large Medical Library Room, 19 Boylston Place, on Wednesday evening, December 15th, at 7.45 o'clock. The meeting will open with a discussion upon a paper read at the last meeting by Dr. E. W. Cushing, entitled, "On Erosions of the Os Uteri, with Demonstrations by Stereoptican of Photographs from Life and Micro-photographs." Drs. R. H. Fitz, W. H. Baker, H. O. Marcy, W. E. Boardman, C. M. Green and J. W. Elliot will take part in the debate. Reader: by invitation, Dr. W. S. Brown, of Stoneham, "The Rôle of the Ovary." Refreshments after the meeting.

JAMES R. CHADWICK, M.D., *Chairman.*
ROBERT B. DIXON, M.D., *Secretary.*

DEATH.

Died, in Boston, December 4, 1886, Frederic Clinton Woodbury, M.D., M.M.S.S., aged twenty-five years.

BOOKS AND PAMPHLETS RECEIVED.

The Physicians' Visiting List. (Lindsay and Blakiston's) for 1887. Thirty-Sixth Year of its Publication.

A Case of Injury from a Strong Electric Current. By Harold N. Mayer, M.D., Assistant to the Chair for Diseases of the Nervous System, Rush College, Chicago. (Reprint.)

A Summary of Tolsti's Views on Arterio-Capillary Sclerosis. By F. B. Stephenson, M.D., United States Navy. New York: 1886. (Reprint.)

La Goutte, Sa Nature et Son Traitement. Par Dr. W. Ebstein. Traduction du Dr. E. Chambard. Introduction du Prof. Charcot, Orné de 12 Chromolithographics. Paris: J. Rothschild. 1887.

Fiske Fund Prize Dissertation, No. XXXVI. New and Altered Forms of Disease, due to the Advances of Civilization in the last Half Century. By Hobart Amory Hare, M.D.B.Sc. Philadelphia: P. Blakiston, Son & Co. 1886.

A Preliminary Report on Electrolysis; with Special Reference to its Trial in Inflammatory Products in the Female Pelvis. By James Hendrie Lloyd, A.M., M.D., Instructor in Electro-Therapeutics in the University of Pennsylvania. Read before the Philadelphia County Medical Society, October 27, 1886. (Reprint.)

Antisepsis in Ovariotomy and Battey's Operation. Seventy Consecutive Cases with Sixty-Eight Recoveries and Two Deaths. By Robert Battey, M.D., Rome, Georgia. Fellow of the American Gynæcological Society, and Fellow of the British Gynæcological Society; Member of the American Medical Association; Ex-President Medical Association of Georgia; Honorary Fellow of the Obstetrical Society of Edinburgh, of the Medical Society of Virginia, of Abingdon Academy of Medicine, of Augusta Medical Society, of Atlanta Society of Medicine, etc. 1886. (Reprint.)

UNITED STATES ARMY MEDICAL DEPARTMENT LIBRARY

Lectures.

SCIENTIFIC MEN AND THEIR DUTIES.[1]

BY JOHN S. BILLINGS, M.D., (HARV.), Surgeon U. S. A.

Mr. Chairman and Fellow Members of the Philosophical Society: — The honor of the presidency of such a society as this — carrying with it, as it does, the duty of giving at the close of the term of office an address on some subject of general interest, has been aptly compared to the little book mentioned in the Revelations of St. John — the little book which was "sweet in the mouth but bitter in the belly." I can only thank you for the honor, and ask your indulgence as to the somewhat discursive remarks which I am about to inflict upon you.

There is a Spanish proverb to the effect that no man can at the same time ring the bell and walk in the procession. For a few moments to-night I am to ring the bell, and being thus out of the procession I can glance for a moment at that part of it which is nearest. At first sight it does not appear to be a very homogeneous or well-ordered parade, for the individual members seem to be scattering in every direction, and even sometimes to be pulling in opposite ways; yet there is, after all, a definite movement of the whole mass in the direction of what we call progress. It is not this general movement that I shall speak of, but rather of the tendencies of individuals or of certain classes; some of the molecular movements, so to speak, which are not only curious and interesting of themselves, but which have an important bearing upon the mass, and some comprehension of which is necessary to a right understanding of the present condition and future prospects of science in this country.

The part of the procession of which I speak is made up of that body or class of men who are known to the public generally as "scientists," "scientific men," or "men of science." As commonly used, all these terms have much the same significance; but there are, nevertheless, shades of distinction between them, and in fact we need several other terms for purposes of classification of the rather heterogeneous mass to which they are applied. The word "scientist" is a coinage of the newspaper reporter, and as ordinarily used, is very comprehensive. Webster defines a scientist as being "one learned in science, a savant" — that is, a wise man — and the word is often used in this sense. But the suggestion which the word conveys to my mind is rather that of one whom the public suppose to be a wise man, whether he is so or not, of one who claims to be scientific. I shall, therefore, use the term "scientist" in the broadest sense, as including scientific men, whether they claim to be such or not, and those who claim to be scientific men whether they are so or not.

By a scientific man I mean a man who uses scientific method in the work to which he specially devotes himself; who possesses scientific knowledge, not in all departments, but in certain special fields. By scientific knowledge we mean knowledge which is definite and which can be accurately expressed. It is true that this can rarely be done completely, so that each proposition shall precisely indicate its own conditions, but this is the ideal at which we aim. There is no man now living who can properly be termed a complete savant, or scientist, in Webster's sense of the word. There are a few men who are not only thoroughly scientific in their own special departments, but are also men possessed of much knowledge upon other subjects and who habitually think scientifically upon most matters to which they give consideration; but these men are the first to admit the incompleteness and superficiality of the knowledge of many subjects which they possess, and to embrace the opportunity which such a society as this affords of meeting with students of other branches and of making that specially advantageous exchange in which each gives and receives, yet retains all that he had at first.

Almost all men suppose that they think scientifically upon all subjects; but, as a matter of fact, the number of persons who are so free from personal equation due to heredity, to early associations, to emotions of various kinds, or to temporary disorder of the digestive or nervous machinery that their mental vision is at all times achromatic and not astigmatic, is very small indeed.

Every educated, healthy man possesses some scientific knowledge, and it is not possible to fix any single test or characteristic which will distinguish the scientific from the unscientific man. There are scientific tailors, bankers and politicians, as well as physicists, chemists, and biologists. Kant's rule, that in each special branch of knowledge the amount of science, properly so called, is equal to the amount of mathematics it contains, corresponds to the definition of pure science as including mathematics and logic, and nothing else. It also corresponds to the distinction which most persons, consciously or unconsciously, make between the so-called physical and the natural or biological sciences. Most of us, I presume, have for the higher mathematics, and for the astronomers and physicists who use them, that profound respect which pertains to comparative ignorance, and to a belief that capacity for the higher branches of abstract analysis is a much rarer mental quality than are those required for the average work of the naturalist. I do not, however, propose to discuss the hierarchy of the sciences; and the term science is now so generally used in the sense of knowledge, more or less accurate, of any subject, more especially in the relations of causes and effects, that we must use the word in this sense, and leave to the future the task of devising terms which will distinguish the sciences, properly so called, from those branches of study and occupation of which the most that can be said is that they have a scientific side. It is a sad thing that words should thus become polarized and spoiled, but there seems to be no way of preventing it.

In a general way we may say that a scientific man exercises the intellectual more than the emotional faculties, and is governed by his reason rather than by his feelings. He should be a man of both general and special culture, who has a little accurate information on many subjects, and much accurate information on some one or two subjects, and who, moreover, is aware of his own ignorance, and is not ashamed to confess it.

We must admit that many persons who are known as scientists do not correspond to this definition. Have you never heard, and perhaps assented to, some such statements as these: "Smith is a scientist, but he does n't seem to have good, common sense," or "he is a scientific crank?"

[1] President's address before the Philosophical Society of Washington, D. C., December 4th, 1886.

The unscientific mind has been defined as one which "is willing to accept and make statements of which it has no clear conception to begin with, and of whose truth it is not assured. It is the state of mind where opinions are given and accepted without ever being subjected to rigid tests." Accepting this definition, and also the implied definition of a scientific mind as being the reverse of this, let us for a moment depart from the beaten track which presidential addresses usually follow, and instead of proceeding at once to eulogize the scientific mind and to recapitulate the wonderful results it has produced, let us consider the unscientific mind a little, not in a spirit of lofty condescension and ill-disguised contempt, but sympathetically, and from the best side that we can find. As this is the kind of mind which most of us share with our neighbors, to a greater or less degree, it may be as well not to take too gloomy a view of it. In the first place, the men with unscientific minds form the immense majority of the human race.

Our associations, habits, customs, laws, occupations, and pleasures are, in the main, suited to these unscientific minds, whose enjoyment of social intercourse, of the every-day occurrences of life, of fiction, of art, poetry, and the drama is, perhaps, none the less because they give and accept opinions without subjecting them to rigid tests. It is because there are a goodly number of men who do this that the sermons of clergymen, the advice of lawyers, and the prescriptions of physicians have a market value. This unscientific public has its uses. We can at least claim that we furnish the materials for the truly scientific mind to work with and upon; it is out of this undifferentiated mass that the scientific mind supposes itself to be developed by specialization, and from it that it obtains the means of its own existence. The man with the unscientific mind, who amuses himself with business enterprises, and who does not care in the least about ohms or pangenesis, may, nevertheless, be a man who does as much good in the world, is as valuable a citizen, and as pleasant a companion as some of the men of scientific minds with whom we are acquainted.

And, in this connection, I venture to express my sympathy for two classes of men who have in all ages been generally condemned and scorned by others, namely, rich men and those who want to be rich. I do not know that they need the sympathy, for our wealthy citizens appear to support with much equanimity the disapprobation with which they are visited by lecturers and writers — a condemnation which seems in all ages to have been bestowed on those who have by those who have not.

So far as those who actually are rich are concerned, we may, I suppose, admit that a few of them — those who furnish the money to endow universities and professorships, to build laboratories, or to furnish in other ways the means of support to scientific men — are not wholly bad. Then, also, it is not always a man's own fault that he is rich; even a scientist may accidentally and against his will become rich.

As to those who are not rich, but who wish to be rich, whose chief desire and object is to make money, either to avoid the necessity for further labor, or to secure their wives and children from want, or for the sake of power and desire to rule, I presume it is unsafe to try to offer any apologies for their existence. But when it is claimed for any class of men, scientists or others, that they do not want these things it is well to remember the remarks made by old Sandy Mackay after he had heard a sermon on universal brotherhood: "And so the deevil's dead. Puir auld Nickie; and him so little appreciated, too. Every gowk laying his sins on auld Nick's back. But I'd no bury him until he began to smell a wee strong like. It's a grewsome thing is premature interment."

I have tried to indicate briefly the sense in which the terms "scientist" and "scientific man" are to be used and understood, and you see it is not an easy matter. The difficulty is less as regards the term "man of science." By this expression we mean a man who belongs to science peculiarly and especially, whose chief object in life is scientific investigation, whose thoughts and hopes and desires are mainly concentrated upon his search for new knowledge, whose thirst for fresh and accurate information is constant and unsatiable. These are the men who have most advanced science, and whom we delight to honor, more especially in these later days, by glowing eulogiums of their zeal, energy, and disinterestedness.

The man of science, as defined by his eulogists, is the *beau idéal* of a philosopher, a man whose life is dedicated to the advancement of knowledge for its own sake, and not for the sake of money or fame, or of professional position or advancement. He undertakes scientific investigations exclusively or mainly because he loves the work itself, and not with any reference to the probable utility of the results. Such men delight in mental effort, or in the observation of natural phenomena, or in experimental work, or in historical research in giving play to their imagination, in framing hypotheses, and then in endeavoring to verify or disapprove them, but always the main incentive is their own personal satisfaction (with which may be mingled some desire for personal fame), and not the pleasure or the good of others. Carried to an extreme, the eulogy of such men and their work is expressed in the toast of the Mathematical Society of England: "Pure mathematics; may it never be of use to any man!" Now, it is one thing to seek one's own pleasure, and quite another thing to pride one's self upon doing so. The men who do their scientific work for the love of it do some of the best work, and, as a rule, do not pride themselves on it, or feel or express contempt for those who seek their pleasure and amusement in other directions. It is only from a certain class of eulogists of pure science, so called, that we get such specimens of scientific "dudeism" as the toast just quoted, opposed to which may be cited the Arab saying that "A wise man without works is like a cloud without water."

There are other men who devote themselves to scientific work, but who prefer to seek information that may be useful; who try to advance our knowledge of Nature's laws in order that man may know how to adapt himself and his surroundings to those laws, and thus be healthier and happier. They make investigations, like the men of pure science — investigations in which they may or may not take pleasure, but which they make, even if tedious and disagreeable, for the sake or solving some problem of practical importance. These are the men who receive from the public the most honor, for it is seen that their work benefits others. After all, this is not peculiar to the votaries of science. In all countries and all times, and among all sorts and conditions of men, it has always

been agreed that the best life, that which most deserves praise, is that which is devoted to the helping others, which is unselfish, not stained by envy or jealousy, and which has as its main pleasure and spring of action the desire of making other lives more pleasant, of bringing light into the dark places, of helping humanity.

But, on the other hand, the man who makes a profession of doing this, and who makes a living by so doing, the professional philanthropist, whether he be scientist or emotionalist, is by no means to be judged by his own assertions. Some wise German long ago remarked that "*Esel singen schlecht, weil sie zu hoch anstimmen*" — that is, "asses sing badly because they pitch their voices too high," and it is a criticism which it is well to bear in mind.

In one of the sermons of Kin O's[2] the preacher tells the story of a powerful clam who laughed at the fears of other fish, saying that when he shut himself up he felt no anxiety; but on trying this method on one occasion, when he opened his shell he found himself in a fishmonger's shop. And to rely on one's own talents, on the services one may have rendered, on cleverness, judgment, strength, or official position, and to feel secure in these, is to court the fate of the clam.

There are not very many men of science, and there are no satisfactory means of increasing the number; it is just as useless to exhort men to love science, or to sneer at them because they do not, as it is to advise them to be six feet three inches high, or to condemn a man because his hair is not red.

While the ideal man of science must have a "clear, cold, keen intellect, as inevitable and as merciless in its conclusions as a logic engine," it would seem that, in the opinion of some, his greatness and superiority consists not so much in the amount of knowledge he possesses, or in what he does with it, as in the intensity and purity of his desire for knowledge.

This so-called thirst for knowledge must be closely analogous to an instinctive desire for exercise of an organ or faculty, such as that which leads a rat to gnaw, or a man of fine physique to delight in exercise. Such instincts should not be neglected. If the rat does not gnaw, his teeth will become inconvenient or injurious to himself, but it is not clear that he deserves any special eulogium merely because he gnaws.

It will be observed that the definition of a scientific man or man of science, says nothing about his manners or morals. We may infer that a man devoted to science would have neither time nor inclination for dissipation or vice; that he would be virtuous either because of being passionless, or because of his clear foresight of the consequences of yielding to temptation.

My own experience, however, would indicate that this inference is not correct, or that some supposed scientific men have been wrongly classified as such. How far the possession of a scientific mind and of scientific knowledge compensates, or atones for, ill-breeding or immorality, for surliness, vanity, and petty jealousy, for neglect of wife or children, for uncleanliness, physical and mental, is a question which can only be answered in each individual case; but the mere fact that a man desires knowledge for its own sake appears to me to have little to do with such questions. I would prefer to know whether the man's knowledge and work is of any use to his fellow-men, whether he is the cause of some happiness in others which would not exist without him. And it may be noted that while utility is of small account in the eyes of some eulogists of the man of science, they almost invariably base their claims for his honor and support upon his usefulness.

The precise limit beyond which a scientist should not make money has not yet been precisely determined, but in this vicinity there are some reasons for thinking that the maximum limit is about $5,000 per annum. If there are any members of the Philosophical Society of Washington who are making more than this, or who, as the result of careful and scientific introspection, discover in themselves the dawning of a desire to make more than this, they may console themselves with the reflection that the precise ethics and etiquette which should govern their action under such painful circumstances have not yet been formulated. The more they demonstrate their indifference to mere pecuniary considerations, the more creditable it is to them; so much all are agreed upon; but this is nothing new, nor is it specially applicable to scientists. Yet while each may and must settle such questions as himself for himself, let him be very cautious and chary about trying to settle them for other people. Denunciations of other men engaged in scientific pursuits, on the ground that their motives are not the proper ones, are often based on insufficient or inaccurate knowledge, and seldom, I think, do good.

This is a country and an age of hurry, and there seems to be a desire to rush scientific work, as well as other things. One might suppose, from some of the literature on the subject, that the great object is to make discoveries as fast as possible; to get all the mathematical problems worked out; all the chemical combinations made; all the insects and plants properly labelled; all the bones and muscles of every animal figured and described. From the point of view of the man of science, there does not seem to be occasion for such haste. Suppose that every living thing were known, figured, and described. Would the naturalist be any happier? Those who wish to make use of the results of scientific investigation, of course, desire to hasten the work, and when they furnish the means, we cannot object to their urgency; moreover, there is certainly no occasion to fear that our stock of that peculiar form of bliss known as ignorance will be soon materially diminished.

From my individual point of view, one of the prominent features in the scientific procession is that part of it which is connected with Government work. Our Society brings together a large number of scientific men connected with the various Departments, some of them original investigators; most of them men whose chief, though not only pleasure is study. A few of them have important administrative duties, and are brought into close relations with the heads of Departments and with Congress. Upon men in such positions a double demand is made, and they are subject to criticism from two very different standpoints. On the one hand are the scientists, calling for investigations which shall increase knowledge, without special reference to utility, and sometimes asking that employment be given to a particular scientist, on the ground that the work to which he wishes to devote himself is of no known use, and, therefore, will not support him. On the other hand, is the demand from the business men's point of view — that they shall show practical results; that in demands for appropriations from the public

[2] Cornhill Magazine, August, 1869, p. 196.

funds, they shall demonstrate that the use to be made of such appropriations is for the public good, and that their accounts shall show that the money has been properly expended — "properly," not merely in the sense of usefully, but also in the legal sense — in the sense which was meant by Congress in granting the funds. Nay, more, they must consider not only the intentions of Congress, but the opinions of the accounting officers of the Treasury, the comptroller and auditor, and their clerks, and not rely solely on their own interpretation of the statutes, if they would work to the best advantage, and not have life made a perpetual burden and vexation of spirit.

There is a tendency on the part of business men and lawyers to the belief that scientific men are not good organizers or administrators, and should be kept in leading-strings; that it is unwise to trust them with the expenditure of, or the accounting for, money, and that the precise direction in which they are to investigate should be pointed out to them. In other words, that they should be made problem-solving machines as far as possible. When we reflect on the number of persons, who, like Mark Twain's cat, feel that they are "nearly lightning on superintending"; on the desire for power and authority, which is almost universal, the tendency to this opinion is not to be wondered at. Moreover, as regards the man of science, there is some reason for it in the very terms by which he is defined, the characteristics for which he is chiefly eulogized.

The typical man of science is, in fact, in many cases an abnormity, just as a great poet, a great painter, or a great musician is apt to be, and this not only in an unusual development of one part of the brain, but in an inferior development in others. True, there are exceptions to this rule — great and illustrious exceptions; but I think we must admit that the man of science often lacks tact, and is indifferent to, and careless about matters which do not concern his special work, and especially about matters of accounts and pecuniary details. If such a man is at the head of a bureau, whose work requires many subordinates, and the disbursement of large sums of money, he may consider the business management of his office as a nuisance, and delegate as much of it as possible to some subordinate official, who, after a time, becomes the real head and director of the bureau. Evil results have, however, been very rare, and the recognition of the possibility of their occurrence is by no means an admission that they are a necessity, and still less of the proposition that administrative officers should not be scientific men.

I feel very sure that there are always available scientific men, thoroughly well informed in their several departments, who are also thoroughly good business men, and are as well qualified for administrative work as any. When such men are really wanted, they can always be found, and, as a matter of fact, a goodly number of them have been found, and are now in the Government service.

The head of a bureau has great responsibilities; and while his position is, in many respects, a desirable one, it would not be eagerly sought for by most scientific men if its duties were fully understood.

In the first place the bureau chief must give up a great part of his time to routine hack work. During his business, or office, hours he can do little else than this routine work, partly because of its amount, and partly because of the frequent interruptions to which he is subjected. His visitors are of all kinds and come from all sorts of motives — some to pass away half an hour, some to get information, some seeking office.

It will not work well if he takes the ground that his time is too important to be wasted on casual callers and refers them to some assistant. In the second place he must, to a great extent at least, give up the pleasure of personal investigation of questions that specially interest him, and turn them over to others. It rarely happens that he can carry out his own plans in his own way, and perhaps it is well that this should be the case. The general character of his work is usually determined for him either by his predecessors, or by Congress, or by the general consensus of opinion of scientific men interested in the particular subject or subjects to which it relates. This last has very properly much weight; in fact, it has much more weight than one might suppose, if he judged from some criticisms made upon the work of some of our bureaus whose work is more or less scientific. In these criticisms it is urged that the work has not been properly planned and correlated; that it should not be left within the power of one man to say what should be done; that the plans for work should be prepared by disinterested scientific men — as, for instance, by a committee of the National Academy — and that the function of the bureau official should be executive only.

I have seen a good deal of this kind of literature within the last ten or twelve years, and some of the authors of it are very distinguished men in scientific work; yet I venture to question the wisdom of such suggestions. As a rule, the plans for any extended scientific work to be undertaken by a Government department are the result of very extended consultation with specialists, and meet with the approval of the majority of them. Were it otherwise, the difficulties in obtaining regular annual appropriations for such work would be great and cumulative, for in a short time the disapproval of the majority of the scientific public would make itself felt in Congress. It is true that the *vis inertiæ* of an established bureau is very great. The heads of Departments change with each new administration, but the heads of bureaus remain; and if an unfit man succeeds in obtaining one of these positions, it is a matter of great difficulty to displace him; but it seems to me to be wiser to direct the main effort to getting right men in right places rather than to attempt to elaborate a system which shall give good results with inferior men as the executive agents, which attempt is a waste of energy.

You are all familiar with the results of the inquiry which has been made by a Congressional committee into the organization and work of certain bureaus which are especially connected with scientific interests, and with the different opinions which this inquiry has brought out from scientific men. I think that the conclusion of the majority of the committee, that the work is, on the whole, being well done, and that the people are getting the worth of their money, is generally assented to. True, some mistakes have been made, some force has been wasted, some officials have not given satisfaction; but is it probable that any other system would give so much better results that it is wise to run the risk of change?

This question brings us to the only definite proposition which has been made in this direction, namely,

the proposed Department of Science, to which all the bureaus whose work is mainly scientific, such as the Coast Survey, the Geological Survey, the Signal Service, the Naval Observatory, etc., shall be transferred.

The arguments in favor of this are familiar to you, and, as regards one or two of the bureaus, it is probable that the proposed change would effect an improvement; but as to the desirability of centralization and consolidation of scientific interests and scientific work into one department under a single head, I confess that I have serious doubts.

One of the strongest arguments in favor of such consolidation that I have seen, is the address of the late president of the Chemical Society of Washington, Professor Clarke, "On the Relations of the Government to Chemistry," delivered about a year ago. Professor Clarke advises the creation of a large, completely-equipped laboratory, planned by chemists and managed by chemists, in which all the chemical researches required by any department of the Government shall be made, and the abandonment of individual laboratories in the several bureaus on the ground that these last are small, imperfectly equipped, and not properly specialized; that each chemist in them has too broad a range of duty and receives too small a salary to command the best professional ability. He would have a national laboratory, in which one specialist shall deal only with metals, another with food products, a third with drugs, etc., while over the whole, directing and correlating their work, shall preside the ideal chemist, the all-round man, recognized as the leader of the chemists of the United States. And so should the country get better and cheaper results. It is an enticing plan and one which might be extended to many other fields of work. Granting the premises that we shall have the best possible equipment, with the best possible man at the head of it, and a sufficient corps of trained specialists, each of whom will contentedly do his own work as directed and be satisfied, so that there shall be no jealousies, or strikes, or boycotting, and we have made a long stride toward Utopia. But before we centralize in this way we must settle the question of classification. Just as in arranging a large library there are many books which belong in several different sections, so it is in applied science. Is it certain that the examination of food-products or of drugs, should be made under the direction of the national chemist rather than under that of the departments which are most interested in the composition and quality of these articles? This does not seem to be a self-evident proposition by any means. The opinion of a scientific man as to whether the Government should or should not undertake to carry out any particular branch of scientific research and publish the results, whether it should attempt to do such work through officers of the Army and Navy, or more or less exclusively through persons specially employed for the purpose, whether the scientific work shall be done under the direction of those who wish to use, and care only for, the practical results, or whether the scientific man shall himself be the administrative head and direct the manner in which his results shall be applied; the opinion of a scientific man on such points, I say, will differ according to the part he expects or desires to take in the work, according to the nature of the work, according to whether he is an Army or Navy officer or not, according to whether he takes more pleasure in scientific investigations than in administrative problems, and so forth.

It is necessary, therefore, to apply a correction for personal equation to each individual set of opinions before its true weight and value can be estimated, and, unfortunately, no general formula for this purpose has yet been worked out.

I can only indicate my own opinions, which are those of an Army officer, who has all he wants to do, who does not covet any of his neighbors' work or goods, and who does not care to have any more masters than those which he is at present trying to serve. You see that I give you some of the data for the formula by which you are to correct my statements, but this is all I can do.

I am not inclined at present to urge the creation of a department of science as an independent department of the Government having at its head a Cabinet officer. Whether such an organization may become expedient in the future seems to me doubtful; but at all events I think the time has not yet come for it.

(To be continued.)

ON THE HYGIENIC LAWS AND SANITARY CONDITIONS OF ANCIENT ROME.[1]

BY PROF. RODOLFO LANCIANI, LL.D.,
Government Director of Archæological Researches at Rome.

The hospital, even in its most rudimentary shape, was not known in Rome much before the third century of the Christian Era. In fact, Celsus Aurelianus, an eminent physician, who wrote at the beginning of the third century a treatise "On Acute and Chronic Diseases" — "*De Morbis Acutis et Chronicis*" — reproaches his colleagues for their obstinacy in keeping the patients in absolute confinement, as a practice injurious to the progress of science. It is not difficult to explain this state of things. First, the members of the higher classes of society were not in need of public sanitary institutions; secondly, the slaves, of whom the manufacturing and trading class was mostly composed, had to be assisted at the expense of their own masters in case of sickness; and besides, medicine was not known and practised as a science, but only on an empiric sort of routine. Hence the consequence that patients were compelled to confide more in gods than in men, and trust in a supernatural help to get rid of their ailments. We must also bear in mind that charity was a feeling altogether unknown in ancient times, and suffocated, at any rate, by the spirit of conquest, by the maintenance of slavery, and by the passion for bloody and revolting gladiatorial shows, which rendered even the most tender Roman hearts and souls insensible to the sufferings of the neighbor.

Livy asserts (I, 12) that the Romans kept always faithful to the precept of Numa: "*unam opem ægris corporibus relictam si pax veniaque ab diis impetrata esset*" — that the peace and good-will of gods were the only remedies and means to recuperate the lost health. Thus the more common cases of sickness to which mankind is subject were deified and idolized, and temples and shrines were set up in their honor. I have mentioned above the altars of the Fever, the sacred wood of Mephitis, the shrine of Orbona, and so on. Apollo, as a God of Hygiene, had a temple near the theatre of Marcellus. This temple, built in the

[1] Concluded from page 541.

year 321 of Rome, and opened for public worship two years later, on the occasion of a terrific stroke of pestilence, has been re-discovered quite by accident nine years ago, in the cellar of a third-class inn, near the Piazza Montanara, called the Albergo della Catena. It will be excavated, we hope, in 1887, in consequence of the destruction of the neighboring ghetto; and considering its state of remarkable preservation, we trust we shall be able to find, at least, fragments of the famous group by Praxiteles and Scopas, representing Apollo fulminating Niobe and her sons, a group described by Pliny (xxxv., 5, 28). Next in importance to the temple of Apollo was the temple of Health, the site of which corresponds nearly to that of the Barberini Palace, on the northern slope of the Quirinal. Women laboring in child-birth could apply to not less than thirteen goddesses, beginning from Juno Lucina, down to Deverra, Diana, Alemona, Nona, Decima, Partula, Antevorta, Postvorta, Eugeria, Fluonia Uterina, Intercidona, etc.

In the year 459, Rome being in danger of annihilation by another plague, followed, as Livy says, by a stupendous mortality, the Sybilline books were consulted, as they always were in cases of supreme danger. The answer was: "*Æsculapium ab Epidauro Romæ arcessendum*" (x., 32) — Æsculapius must be removed from Epidaurus to Rome — and so they did. The new god was comfortably and neatly installed in an island on the Tiber, now called the island of S. Bartolomeo, and its temple became the greatest sanitary establishment in the metropolis.

The practice followed by Roman lower classes was this: "Patients in danger of life were brought into the perystile or atrium of the sanctuary and put to sleep there, evidently by means of narcotic drugs, in order that Æsculapius could manifest in their dreams the proper way of healing their troubles. Once the recipe obtained, the priests themselves would undertake the cure of the guests; and if the cure succeeded, by some unforeseen and wonderful coincidence, then an *ex-voto* was suspended in the sacristy of the sanctuary, together with a tablet describing the happy event. Here is the text of one, given by Thomassinus: "In this last day, said the oracle to Caius the Blind: come to the sacred altar and kneel in front of it, then touch it on the left-hand side, and apply instantly the hand to the eye. Having obeyed, he recovered at once the eyesight, amidst the applause of the assembled multitudes." Is it not a striking coincidence, is it not a striking proof of the vitality of tradition in Rome, the fact that the very same island of the Tiber, the very same spot on the island should have always been since Roman times, and should be now, the seat of a hospital, the hospital of S. John Calibitas? Another curious anecdote is this: It seems that at the entrance of the Fabrician Bridge, leading from the Campus Martius into the island, there were shops for the sale of *ex votos* of every description, exactly as they are to be seen now on the approaches to the great sanctuaries of the Catholic countries. One of these shops has been discovered only six months ago, in the foundations of the left embankment of the Tiber. It contained a large number of anatomical specimens in painted terra-cotta, magnificently modelled from nature, and representing heads, ears, eyes, breasts, arms, hands, knees, legs, feet — *ex-votos* to be offered by happy mothers, etc. The most interesting pieces are three life-size human trunks, cut open right across, and showing the whole anatomical apparatus of the various organs and intestines, such as the lungs, liver, heart, bowels, etc. These pieces have not yet been examined by experts, and, consequently, I am not able to say whether they are capable of throwing any light on ancient hygienic and anatomical matters.

You must not suppose that men of education would resort to such absurdities as those I have described in connection with the temple of Æsculapius. Cicero has strongly condemned the practice in his book, "De Divinitate," but the populace, in spite of such good advice, would adhere to its ignorance and superstition, and this obstinacy had then, and has still, such a firm hold, and such deep roots in the Italian lowest classes, that, only one year ago, in September, 1885, when the cholera broke out in Sicily, physicians trying to exercise their mission of charity were stabbed and killed by the dying patients, as they are stabbed and killed in Hungary and Croatia.

Another strange practice, imported from the East into Rome, was the exposure of the sick in the streets and under open porticos, in order that passers-by could give them advice from personal experience. The first physicians in Rome, if such name can be given to men knowing only the use of a few herbs and potions, came from Abruzzi and from the shores of the lake of Fucino. In progress of time, patrician families secured, at a high price, the services of slaves, experts in medicine, to whom the office of a modern "*valet de chambre*" was assigned. These slaves, emancipated after long, successful services, would open shops, called sometimes *Medicinæ*, sometimes *Farmacopolæ*, in which drugs and physics were sold, and surgical operations performed. For these operations, the patient was put into anæsthesia in a much surer way than we do now with chloroform or laughing-gas. A successful physician was sure to receive high official distinctions. Arcagathus, a Peloponnesian who migrated to Rome in 219, not only was rewarded with the citizenship, but obtained a residence, with shop and office, bought at public expense. Asclepias, from Drusa, Bythinia, was almost deified by the populace, and held in great estimation by Crassus and Cicero. Julius Cæsar was the first statesman to promote the welfare of hygienists, by recognizing them as professors of a liberal art, with rights to citizenship. Augustus, having been cured by his freedman, Antonius Musa, from a dangerous illness, by means of fomentations and cold compresses, made him a knight, honored him with a bronze statue in the temple of Æsculapius, and exempted forever his colleagues from any kind of income-tax. Nero organized the service by naming an archiater, or superintendent of court-physicians. Schools of medicine were opened, and students organized themselves in a corporation, the seat of which was on the Esquiline. When one of the professors was called to visit a patient, he was followed by the whole body of pupils, because, there being no hospitals at the time, this was the only way they could learn and gain experience. Martial describes one of these professional visits in the ninth epigram of the fifth book, and relates how, having sent for Dr. Symmachus, he came at once to his bed, accompanied by more than one hundred disciples, who, one by one, felt his pulse with hands almost frozen by the northern wind, or tramontana, which happened to be blowing at the time.

The merit of having organized a service of public assistance, in the true modern and philanthropic sense of the word, belongs to Antoninus Pius, who acted, I am sure, under the indirect pressure of Christian influence and charity, the new faith having made immense progress in Rome under his wise, temperate rule.

The new sanitary codex comprised the institution of head-physicians (archiaters) in every inhabited centre, and a set of rules for the medical service in the largest cities of the empire. These medical officers had to be elected by the town council, and to be approved by the patres-familiæ. In progress of time, the election had further to be sanctioned by the College of Physicians practising in the same town, and even by the Emperor himself. The assistance to the poor was compulsory and gratuitous.

Such are the results of the campaign thus engaged in by the Romans against malaria, and fought with the means I have endeavored to describe, one by one.

Original Article.

A CASE OF GASTROTOMY. DIGITAL EXPLORATION OF ŒSOPHAGUS, AND REMOVAL OF PLATE OF TEETH. RECOVERY.[1]

Remarks upon the Operation, and Observations upon the Anatomy of the Œsophagus.

BY MAURICE H. RICHARDSON, M.D.,
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Many cases have been recorded where foreign bodies have become lodged in the œsophagus. The most common seat of impaction or lodgement is the very beginning of the tube, at the level of the cricoid cartilage, where its calibre is less than at any other point. It is at or just above this point that smooth and rounded bodies become checked in their course. When their diameter exceeds that of the distended œsophagus they are either regurgitated or produce death by impediment to the air-passages. If a smooth body once passes the first constriction of the œsophagus, it meets no further resistance until the opening in the diaphragm is reached. This is usually passed because the diameter at this part is greater than at the first constriction. When, however, the body is angular, irregular, or with sharp points it is much more likely to become impacted at these natural constrictions, though it may become arrested at any part in the tube, its sharp points catching in the mucous membrane.

The symptoms which follow the impaction of a foreign body in the œsophagus, may be very slight, so that little attention will be paid to them by the patient. We may observe pain, dysphagia, suffocation, spasms, alterations in the voice, cough, expectoration, deformity, or none of these may be present.[2] The immediate symptoms depend upon the shape and size of the body. Pieces of meat may be large enough to produce suffocation, and this is not uncommon in old people who have lost their teeth. Immediate pains may be caused by laceration of the walls of the œsophagus by sharp points or by the pressure of a large body. It may be said that the immediate symptoms are not severe and rarely cause death. Subsequently we may have inflammatory conditions, ulcerations, hæmorrhage, starvation or tolerance of the foreign body.

The inflammatory changes which may follow are œsophagitis or periœsophagitis with formation of abscess. The body may become detached in this way. The abscess may break into the œsophagus or outwardly, or into a neighboring organ. Ulceration may extend into the trachea and bronchi or it may erode a bloodvessel and cause death by fatal hæmorrhage, or by asphyxia. The pleura or pericardium may also be perforated. Death rarely follows primarily, but is generally due to the secondary changes mentioned. A foreign body lodged in the œsophagus, when natural efforts have failed to dislodge it, must either be extracted, pushed down into the stomach or cut out, or it must be left to itself and palliative measures adopted.

Œsophagotomy is to be resorted to only after all other means have failed. Up to the present year this method has been the last and only resort, and it has afforded relief only in those cases where impacted bodies have been within reach from the external incision in the neck.

The possibility of reaching the œsophagus from below has been alluded to by several writers, and œsophageal strictures have been treated instrumentally after the stomach has been opened for purposes of alimentation. Prof. Loreta, of Bologna, in a monograph published in 1884[3] mentions cases of gastrotomy not only for digital dilatation of the pylorus but also for divulsion of œsophageal stricture. He gives four cases with recovery in which a small opening was made in the stomach, instruments passed into the œsophagus, and the stricture divulsed. The operation was completed by sewing up both stomach and abdominal wound. Bergmann and Schattauer have succeeded in passing bougies through a stricture of the œsophagus from below. Wentlechner has passed a delicate sound down through the stricture and out of the opening in the stomach. He also attached a thread to the lower end of the sound and by means of it drew up after it larger instruments, drainage-tubes, etc.[4] Von Hacker[5] did a similar operation and obtained a good result in a cicatricial contraction of the œsophagus by the introduction of a Nélaton catheter stretched over a whalebone guide. In a letter to Dr. Randolph Winslow, of Baltimore, he mentioned two cases in which the operation of dilatation by the use of drainage tubes attached to filiform bougies had been performed, in one of which he states that the operation had already been successful, and the other had been but recently performed at the time of writing.[6]

In these cases advantage has been taken of the gastric fistula already existing to approach the œsophagus from below, or a small incision has been made into the stomach for the introduction of bougies or divulsors of small diameter.

I can find no recorded cases where the œsophagus has been explored with the fingers, the hand being introduced into the stomach.

The experience gained in the following case with an experimental study of the anatomy of the parts concerned, convinces me that this surgical procedure

[1] Read at the Meeting of the Suffolk District Medical Society, Section for Surgery, November 3, 1886.

[2] Poulet. Foreign Bodies, Vol. I.

[3] See Review by Ancona in Archives Gén. de Médicéne, 1885, II p. 318.

[4] Philadelphia Med. News, September 4, 1886, p. 267.

[5] Von Hacker. Ueber die Magen-Operationen.

[6] Dr. R. Winslow in Philadelphia Med. News, September 25, 1886, p. 360.

may be undertaken in many cases where operative measures have hitherto been considered out of the question. In twelve subjects I found the distance in a straight line from the centre of an incision five inches long, one inch below and parallel to the margin of the ribs on the left side, beginning at the outer border of the rectus abdominis to the œsophageal opening in the diaphragm, to be 7.55 inches. Through an incision of five inches in the anterior wall of the stomach the hand and forearm could easily be passed and the index and middle finger introduced through the diaphragmatic opening their whole length, about two and a half inches. There was some difficulty at first in finding the cardiac opening, but this was very soon overcome.

The best method of introducing an instrument into the œsophagus is as follows: The cut in the stomach should be made at the point which presents itself most naturally at the centre of the abdominal incision, that is, about four inches from the pylorus. The assistant makes tense the lesser curvature by traction with the thumb and finger downwards, forwards and to the left. The lesser curvature is thus straightened out and the mucous surface of the stomach corresponding to it is formed into a sort of groove, along which the instrument glides directly into the cardiac orifice. To do this easily one must accustom himself to the operation by repeated experiments upon the cadaver. Great assistance can be gained by finding the diaphragmatic opening outside the œsophagus, with the left hand. I was able in this way repeatedly to grasp coins placed in the œsophagus beyond reach of the fingers by means of forceps. In cases of foreign bodies the œsophagus should be examined before the stomach is opened, for it may be possible thus to dislodge them. A small incision should then be made into the stomach through which efforts may be made to remove the body by means of instruments. Later this may be enlarged enough to admit the hand. It is important to ascertain as accurately as possible the position of the foreign body with reference to the opening in the diaphragm, not only that we may be sure it is within reach of the finger from below, but also that we may know its relations with other organs.

At the diaphragm the œsophagus is not in contact with the pleura, and it is not so closely related to the aorta behind. A foreign body impacted here would not be in such close relations with important structures, and the danger from ulceration and perforation would be less. This fact would have weight in deciding upon a palliative course of treatment. Moreover, an abscess at this point would most naturally drain into the stomach. Two inches higher up, the œsophagus is directly in contact with the heart in front, the aorta behind, and the pleural cavities on each side.

The danger of erosion of arteries, perforation of the pleura and pericardium, abscess of the mediastinum, etc., would be very much greater than at the diaphragm and we might not feel ourselves justified in waiting. Finally, it may be demonstrated that the body is beyond the reach of the finger and the surgeon will then be called upon to decide whether it is better to open the stomach for the purpose of using instruments of traction, or to attack from above by œsophagotomy.

The following table gives the measurements of the distance from the upper incisors, when the head is fully extended, to the opening in the diaphragm, as well as the measurements referred to above.

No.	Height. Ft.	In.	From Incisors. In.	From Abdominal Cut. In.
1	6		14½	
2	4	3 (deformed).	10½	Not Taken. " "
3	5	4	15	8½
4	5	7½	16½	7½
5	5	6	15¾	8¼
6	5	3¾	15	7
7	5	4	15¼	6¾
8	5	7	15½	7½
9	5	5½	15½	7½
10	5	6	16½	8½
11	5	7	16¾	8
12	5	4	15½	7
13	4	10	15½	7½
14	5	4	14	8¼
Average	5	5	15	7.55

From these figures it may fairly be said that a foreign body may be reached with the finger from below, when its distance from the incision, determined by the probang, in not less than thirteen inches. In a cadaver in which this measurement was fifteen and three-quarters inches, I was able to touch, grasp, and remove with my fingers a silver quarter-dollar situated twelve and one-half inches from the incisors. This was repeated several times with larger coins, silver half-dollars and dollars.

A glance at this table will show that the distance from the incisors to the diaphragm does not bear a constant ratio to the height. A man of six feet measured fourteen inches, while another of four feet ten inches, measured fifteen and one-half. Without regarding the height we may say that the average distance is about fifteen inches in fourteen subjects taken at random.

Since reading this paper and hearing Dr. Cheever's remarks in regard to the distance he could reach down the œsophagus in his cases of œsophagotomy, I have dissected with special reference to this point. I find that in a female subject with a measurement of fifteen and three-fourths inches from incisors to diaphragm, not only can the aorta be reached easily after left œsophagotomy in neck, but the finger can be hooked under the arch. When the left index was in contact with the lower disc of a silver dollar in the œsophagus, the right middle finger introduced from above through the neck, could very easily be made to touch the upper. It was next found practicable to pass a half-dollar from one hand to the other, and finally the *fingers* were made to touch each other. In four other subjects these experiments were repeated and the fingers could be brought in contact with ease.

From these observations I think it may be asserted that *there is no part of the human œsophagus which may not be reached, or very nearly reached, with the finger either by gastrotomy or by œsophagotomy.* Also that with the finger as a guide instruments may be used with intelligence upon any part of the canal.

The following unique case illustrates clinically the truth of some of the anatomical observations recorded above. It should be said, however, that these facts were not known at the time of the operation, and it was not thought to be at all certain that the foreign body was within reach of the fingers. Preparations were made beforehand for the use of a long forceps both for crushing and for tractions, and it was even thought that the lithotrite might be necessary. The case illustrates also the remarkable tolerance of the œsophagus at times. As will be seen, a grave

complication already existed without giving any sign of its presence, namely, a pericœsophageal abscess which the manipulations of the operation caused to break into the lung. The other symptoms present, pain and starvation, in themselves rendered the operation imperative. The facts made known by the operation and subsequent history prove that if a much earlier attempt at removal had been made, the danger of inflammation and starvation would have been avoided and the chance of recovery from the operation itself would have been better.

John McCarty, thirty-seven years of age, six feet one and one-half inches high, very robust, teamster, came to the medical room of the Out-Patient Department of the Massachusetts General Hospital, September 26th, 1886. He was referred to me as out-patient surgeon. He said that three days before, while eating he had swallowed his false teeth. He described the plate as being about the size of a silver half-dollar carrying the four anterior teeth of the left upper jaw, and as leaving two small hooks by which it was fastened to the teeth still left in that bone. I passed a small ivory probang into the œsophagus and detected the foreign body easily. It was situated far down in the tube apparently near the stomach. He was recommended for admission and was assigned to Dr. Beach.

On entrance he felt weak and complained of pain under the sternum between the nipples. There was also a little soreness on pressure. Had some pain in taking a long breath. Swallowed liquid food. Two days later felt better; was examined by Dr. Beach. An ivory-tipped probang struck against a hard body apparently just above the cardiac opening of the stomach. A good-sized stomach-tube passed by the teeth. A coin probang was caught under the plate. On pulling, the end broke off.

September 29. Consultation of surgeons decided against operation.

October 3d. One week after accident was able to take soft food well.

October 7th. Passed end of probang *per rectum.*

October 23d. Had some pain and soreness apparently at the pylorus. Some nausea. A stomach-tube was passed into the stomach without obstruction. Was given charpie cut fine mixed with white of egg.[7]

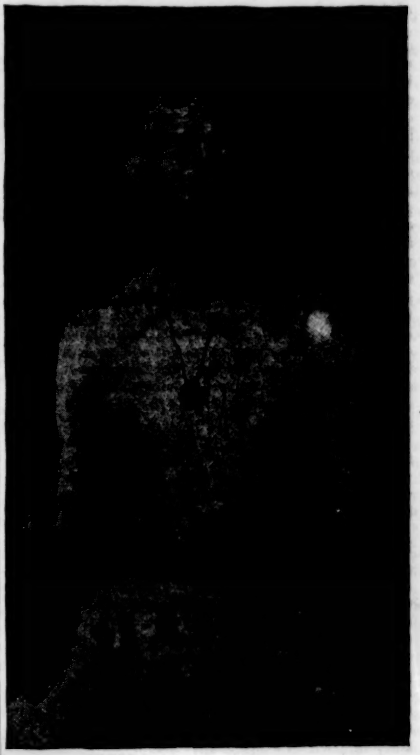
November 10th. Was improving in health and strength. Had good appetite and less pain.

Discharged, to report if he has any trouble.

December 3d. Reported that he felt comfortable; had not passed teeth.[8]

Patient re-entered hospital July 23d, 1886. Says he has been losing flesh since leaving the hospital, and now weighs one hundred and thirteen pounds, about sixty-five pounds less than before accident. He has considerable soreness when he swallows, and at times is unable to retain any food. He is very much emaciated, though his health is good.[9]

I examined again with the ivory probang, and found a foreign body exactly in the same spot as the year before. His condition at this time was quite deplorable. From a robust and strong man, whose normal weight was one hundred and eighty pounds, he had become extremely emaciated. It was with great difficulty that he could swallow enough liquid food to keep alive. Solid food could not be taken at all. He complained of constant and severe pain in the epigastrium, and in the back. From the date of entrance until August 5th he was carefully observed. It was found that the probang came in contact with the foreign body just fourteen inches from the incisor teeth. As nearly as could be estimated, this would make their position about two inches above the line of the nipples (see Fig.), and some little distance



From a photograph taken 3 months after operation. The plate is suspended on the chest wall to show as accurately as possible its location when lodged in the œsophagus. The distance from the plate to the centre of the abdominal incision is 12 inches. As the stomach was drawn out of the abdominal wound two or three inches the distance from the opening in the stomach to the foreign body was at least 12 inches.

above the cardiac opening of the stomach. In this position, the plate, with its sharp edges, would lie between the heart in front, and the thoracic aorta behind, and separated on either side from the pleura by the thickness of the œsophageal wall.

After careful consideration of the case, I advised that an attempt be made to remove the plate by opening the stomach. The patient gladly consented. For two days before the operation nothing was

[7] See Poulet, Vol. 1, p. 158. Case in which the irregularities of a plate of teeth, lodged in stomach, were covered and concealed after a diet of oakum and raisins continued one week. Expulsion from rectum with oakum adherent and irregularities thereby smoothed.

[8] Mass. Gen. Hosp. Records, Vol. 219, p. 200.

[9] Mass. Gen. Hosp. Records, Vol. 226, p. 80.

taken into the stomach, except water and stimulants, food being given entirely by enemata. It was not practicable to wash out the stomach, because of the difficulty in passing a stomach-tube by the obstruction.

August 5th, 1886. Patient was carefully etherized. An unsuccessful attempt was first made to demonstrate beyond possibility of a doubt the presence of the foreign body. Some difficulty presented itself in doing this, and the attempt was abandoned to save time. Moreover, it was not essential, as the probang had been used the day before in studying the location of the plate.

An incision about six inches long was made one and one-half inches below and parallel to the margin of the ribs in the left hypochondrium. It began at the outer border of the *rectus abdominis*, three inches from tip of ensiform cartilage, and extended outwards and downwards. The abdominal wall was rapidly cut, layer by layer, until, all bleeding having been stopped, the peritoneal cavity was opened. The abdominal opening was held up by means of a T-hook at each extremity. The stomach was found lying empty in its usual position. An external examination was made of the cardiac orifice and of the whole stomach, to see if the foreign body might not be found and dislodged by manipulations. Nothing could be detected either in the stomach or the diaphragmatic opening. The stomach was now drawn out of the abdominal wound as far as possible, and placed upon a carbolized towel, and in this position all the subsequent manipulations were done. A small incision about one and one-half inches long was first made through the anterior wall of the stomach, beginning near the pylorus, and extending upwards and backwards midway between the greater and lesser curvatures. The walls were very thick and vascular. After cutting through the peritoneal and muscular layer, a dense network of large and tortuous vessels came into view, which, on being divided, bled very profusely. This was controlled by smooth-bladed, hæmostatic forceps.

After two unsuccessful attempts to introduce grasping instruments into the œsophagus through this small opening, I enlarged the incision sufficiently to admit my hand and forearm. The stomach was first wiped out with sponges and held with T-hooks. The walls of the diaphragmatic opening were found with some difficulty after passing the hand seemingly a very great distance. The middle and index fingers were then pushed up the œsophagus between the heart in front and aorta behind until the plate was felt, with the teeth pointing downwards, apparently embedded in a mass of soft granulations. The hand was withdrawn, and long-bladed forceps introduced into the œsophagus, guided by the index finger, but attempts to grasp the plate were unsuccessful. I then re-introduced my hand, and by careful manipulation with the index finger, succeeded in detaching the left extremity of the plate from its bed in the left side of the canal. The other extremity was then loosened from the right side, and the plate passed easily into my fingers, and was withdrawn from the stomach.

The mucous membrane was united with a continuous silk suture, to control the hæmorrhage which followed the removal of the hæmostatic forceps. The peritoneal surface was closed with thirty-six fine, silk sutures, after the method of Lembert, placed three-sixteenths of an inch apart, the line of union being most perfect and beautiful. The stomach was then dropped back into the abdominal cavity, and the external wound closed in the usual manner with interrupted deep and superficial silk sutures. Iodoform and gauze dressings were applied, with compression. Time of operation, one hour and a quarter.

Although very little blood escaped, the peritoneal cavity was carefully sponged out. "At the end of the operation the patient's pulse was full and strong. At 3 P. M., was having much pain in his side, and was very restless. He complained of cold, and his extremities were chilly to touch. Given brandy freely by rectum. At 5.30, much more comfortable and warm; pulse good. Washes mouth with water, but does not swallow it. Has enema of milk, ℥iss, and brandy, ℥ss, every two hours." During the afternoon vomited a small amount of blood. Evening temperature, 98°.

August 6th. Very comfortable; given ℥i of water.

August 7th. In the morning quite comfortable, except for a slight cough. In the afternoon, he had severe fits of coughing, and after much exertion and distress, would raise ℥i to ℥ii of thick, tenacious pus. Raised during day about ℥viii. Temperature 101.8°.

August 8th. Much better. Raises ℥ii to ℥iv of pus in twenty-four hours. Began to take whiskey and water by mouth, a teaspoonful every ten minutes. Fed by rectum at frequent intervals. Temperature 99.2°.

August 11th. Stitches removed; wound firmly united.

August 13th. Milk by mouth, ℥ss every one-half hour. Some suppuration of stitch-holes, which were enlarged and dressed with a Phenyle pad.

August 14th. ℥ii milk, broth, or ice cream every hour. Ale at intervals. Expectoration much less, and cough not so troublesome.

August 19th. Scraped beef, with cracker for dinner.

August 21st. Given solid food in quite large quantities. No pain; scarcely any cough or expectoration. Wound healed.

August 24th. Sits up in bed.

August 27th. Lungs examined by Dr. E. N. Whittier. Dulness, with broncho-vesicular respiration and broncophony at base of right lung, which accounts for slight elevation of temperature.

September 2d. Walks about ward. 4th. Out in wheel-chair.

September 5th. Weighs one hundred and twenty-one pounds. No cough; signs in lungs disappearing.

September 12th. Weight, one hundred and twenty-seven and a half pounds.

September 18th. Sent to convalescent ward in the country.

October 7th. Returns much stronger. Weight, one hundred and forty-four pounds; no cough.

October 19th. Weight, one hundred and fifty-two pounds.

October 25th. Goes to work as teamster.

November 30th. Weight, one hundred and fifty-nine pounds.

The following are all the recorded cases of gastrotomy for removal of foreign bodies from the stomach to which any allusion is made by writers on this subject, with a few additional ones which I have been able to collect.

CASES OF GASTROTOMY FOR REMOVAL OF FOREIGN BODIES.

1602. The first authentic case on record in which gastrotomy was done for the removal of a foreign body is that of Florian Mathis, in Prague, surgeon to the Emperor Leopold, who successfully extracted a knife twenty-one centimeters long, from the stomach of a Bohemian juggler in 1602. The knife had remained in the stomach fifty-one days, without causing any great inconvenience or suffering. After the application of plasters, the point of the knife-blade penetrated the pyloric end of the stomach, and was there found and removed. After a few weeks, complete recovery.[10]

1635, July 9th. Dr. Daniel Schwabe, of Königsburg, did gastrotomy for the removal of a table-knife eighteen centimeters long and one and a half centimeters broad, swallowed May 25th, 1635, and which had remained in the stomach forty-one days, without causing any essential trouble. A cut was made on the left side beneath the short ribs, the stomach was pierced with curved needles, and the knife drawn out through a cut made upon the knife blade, which could be felt through the walls. The wound in the stomach was left to take care of itself, and the abdominal wound united with five stitches. Complete recovery.[11] "This man, Grunheyde, has played many parts, figuring in Schwabe's case, Gruger's, Becker's, Shoval's, and Mentzer's, and referred to by the careless even as Nevin's or Larrey's."

1692. Wesener, in Halle, removed from a boy of sixteen years, a knife, which had remained in the stomach seven months without causing any severe symptoms. Seven months after swallowing the knife, an ulceration broke out three fingers breadths below the pit of the stomach, with marked redness. Six days afterwards spontaneous opening, with fœtid pus. Nine weeks later the knife projected from the wound; its point was fastened to the abdominal wall with silk threads. Two weeks later it was entirely removed. Complete recovery.[12]

1720. Hübner, in Rastemberg, removed from a woman a knife sixteen and a half centimeters long, which had been in the stomach eleven days. For three days no disturbance; then sharp pain, and shortly after, the knife point could be felt in the left side. On the eleventh day an incision was made in the left hypochondrium, in the spot where there was evidence of slight suppuration. At this point the knife had penetrated the stomach wall. Recovery in a short time.[13]

1786. Frizac, in Toulouse, removed a knife four and a half centimeters long from the stomach of a porter. An incision was made in the epigastrium, parallel to the linea alba, through which the point of the blade of the knife could be felt, and which had already pierced the stomach wall. The point was grasped with forceps, the opening in the stomach enlarged, and the knife extracted. Two stitches were put in the stomach wound, and one quill suture in the abdominal wound. Healing of the wound and recovery. Baron Larrey was present at this operation, and the case is probably authentic, although it has been overlooked until very recently.[14]

1819. Cayroche removed from a woman of twenty-four a silver fork seventeen centimeters long and two centimeters broad, which had been in the stomach two hundred and twenty-nine days. The fork could be felt through the epigastrium, the handle to the right and the prongs to the left. In five months severe vomiting, then pain, emaciation, swelling in the left side as large as a hen's egg. An incision five centimeters long was made over the tumor from above downwards, the rectus abdominus was drawn to one side, and the stomach was opened. The fork was withdrawn tines first. Recovery in fifty-one days.

1822. Reynaud, in Grénoble, removed a fork from the stomach of a young juggler, where it had remained thirty-one days. Gastrotomy was done on the right side of the abdomen, where the foreign body could be felt. Complete recovery. Man still living in 1875.[15]

1823. A Dr. L——, endorsed by Sedillot, took a silver spoon from the stomach of a soldier.[16] This may be the same case as that quoted by Credé as follows: —

1823. Bertherand removed a silver-coffee spoon from a cavalry man. It had remained in the stomach one week, and had caused pain there, with swelling of the epigastrium. With the exploring needle a hard resonant body was felt. The cut was enlarged, and the spoon withdrawn with forceps. The stomach and abdominal surfaces everywhere adherent. Simple dressing. Rapid and permanent recovery.[17]

1830. Garcia is said to have removed a stick ten inches long from the stomach.[18] This case is considered doubtful.

1836. Fideli, in Riva. A peasant woman, fifty years of age, swallowed a brass fork with four tines, ten inches long without the handle, which remained in the stomach two and a half years. She had terrible pain, sleeplessness, severe cramps, vomiting with every attempt to take food. Fifteen months later an abscess appeared in the right hypochondrium. Two months later a large amount of pus was discharged through the mouth. One month later opening of the abscess outwardly. After repeated closing and breaking out of the wound, the sharp end of the fork appeared. For eleven months the condition continued the same, without the fork protruding any farther. Then for the first time the opening of the abscess was enlarged, and the fork removed. Convulsions followed, with trifling hæmorrhage. For thirty hours' food was discharged through the wound. Fifteen days later it was healed.

1848. Tilanus, in Leiden, removed a silver fork from the stomach of an insane girl thirty-two years old. The fork was twenty-one centimeters long. There was also in the stomach a piece of earthen ware two centimeters long, one centimeter thick, of pyramidal form. Soon after swallowing them she became emaciated and weak, with intense dysphagia. Location of the foreign body made out by palpation. Patient etherized. An incision eight centimeters long, along the linea alba, from a point three centimeters below the ensiform cartilage, was made. The stomach could not be seen, but it could be felt along the left border of the wound. It was drawn forward and fixed with two forceps. An incision two centimeters long was made through the anterior wall of the stomach, and was accompanied by quite severe hæmorrhage. After prolonged efforts, the fork, as well as the piece of earthen ware, was discovered and removed. The wound in the stomach was closed with five sutures, the ends of which were left sticking out of the lower angle of the wound. The abdominal wound was closed with simple sutures, and adhesive plaster placed over all. On the first and second days occasional vomiting of a greenish yellow fluid. Abdomen somewhat painful, tender, and tympanitic. Pulse 100° on the second day, small and weak. Death on the morning of the third day. Autopsy. — Plastic exudation in the neighborhood of the wound. The stomach, liver and abdominal wall glued together. The stomach wound entirely closed. Great dilation of the stomach. The upper third of the œsophagus considerably wounded and perforated in the neighborhood of the larynx. Suppurating sinus near the thyroid gland.[19]

1855. J. Bell's case, also reported by T. B. Neal.[20] This was a man who, in a drunken fit, in imitation of a juggler, swallowed, on a bet, a bar of lead ten inches long by three-fourths by one-half, weighing one pound, on Christmas day, 1854. Pain, vomiting and gastritis supervened. January 3d, 1855, an incision four inches long was made from the umbilicus to the false ribs, two inches to the left of the median line. An incision was

[10] Otis. Med. and Surg. Hist. of the War, 2d Surgical Vol., page 59. Also Credé, Langenbeck's Archives, Vol. 33, 1886, page 584.
[11] Otis. Loc. cit. Credé Loc. cit., page 580.
[12] Credé. Loc. cit., page 584.
[13] Credé. Loc. cit., page 584.
[14] Otis. Loc. cit.
[15] Credé. Loc. cit., page 586.
[16] Otis. Loc. cit.
[17] Sedillot Contributions à la Chirurgie, 1868. Vol. 2, page 456. Quoted by Credé, Loc. cit.
[18] Otis. Loc. cit.
[19] Credé. Loc. cit., page 580.
[20] This case has been quoted both by Poulet and by Credé, as two distinct cases.

made into the stomach just long enough to get the bar out. No sutures were put into the stomach itself, the contraction of its walls being sufficient to bring the edges of the wound together. The abdominal wound was closed with sutures. Thirteen days later the wound was entirely healed. February 19th he was about his work.[21]

1856. Glück, in 1856, made an unsuccessful attempt to remove a laryngeal probang which had been accidentally introduced into the stomach.[22]

1856. ——— in Frankreich von? A fork was removed by gastrotomy, with recovery.[23]

1857. Bouchet, in Lyons, removed a silver fork from a woman's stomach. Result unknown.[25]

1858. Hohlbeck, in Wodkinsk. An iron table fork, with wooden handle, twenty-one centimeters long, was swallowed by a peasant with delirium tremens, and remained in his stomach six and a half months. There was pain in the stomach, loss of appetite, nausea and vomiting. There was found in the left side of the peritoneal cavity, between the seventh and eighth ribs, a small fluctuating spot with a fistula, secreting fetid pus, in which the metallic body could be felt. An incision was made at this point, and the fork extracted. The patient died three months later with caries of the sternum and ribs. Autopsy showed complete adhesion of the stomach wound with the abdominal parietes.[28]

1875–6. Leon Labbé. L., eighteen years, March 30, 1874, swallowed a German-silver fork with five prongs, while imitating a juggler. Had immediate symptoms of asphyxia which suddenly ceased after passing larynx. Fifteen days after there was intense pain and repeated syncope. When this attack had passed, a swelling appeared, corresponding to the point occupied by the greater curvature of the stomach. From this time the patient had alternations of pain and complete freedom from it. His general health became much affected. After some months it was decided to attempt an operation, as the teeth of the fork could be distinctly felt at the limit of the hypochondrium and epigastrium. Caustics were first applied to make the stomach adhere to the abdominal wall, without success. April 9th, an incision was made, and by the aid of forceps, a part of the stomach was drawn through the opening. The fold thus formed was held by a thread. With eight sutures the stomach was fastened to the circumference of the wound. The wall of the stomach was then opened, and with a little manipulation, the fork was removed. Rapid and complete recovery.[24]

1879. J. C. McKee, America.[25] January 15, 1879, a laborer, aged twenty-eight, was playing slight-of-hand tricks with a piece of copper wire, three inches long, which he made mysteriously disappear into his nostril. Suddenly it disappeared into the pharynx and the stomach. Took castor oil without benefit. Worked for two months; then acute pain came on near umbilicus on right side of abdomen, three inches to right below. Tumor gradually formed. Cut down upon the tumor May 4th, and the wire was removed. In this case the foreign body was probably not in the stomach.

1880. Billé's case.[26] This patient used a pencil covered by a sponge, and the whole attached to a new silver wire fifty centimeters long, for the purpose of clearing the slime out of his œsophagus. May 2, 1877, it broke off, and part was left in the œsophagus. Billé first did an œsophagotomy at the level of the hyoid bone, but was not able to grasp the wire. Later he did gastrotomy by an incision through the abdominal wall and peritoneum three and a half centimeters long, two fingers' breadth below the margin of the ribs. An incision two and a half centimeters long was made into the stomach, which was made solid with the abdominal wall before incising the mucous coat. The sponge was felt near the pylorus. This was seized with a pair of forceps and the whole extracted. The upper end of the wire was in the lower extremity of the œsophagus. The whole fragment was thirty-one and five-tenths centimeters long. Patient died five days after operation.

1880. Fleury, L. A.,[27] South America, reports the case of a cook who, July 8, 1880, while trying to amuse some children by pretending to swallow a plated dinner fork, accidentally let it slip from his fingers, and felt it passing down into his stomach. There was no inconvenience except slight nausea and vomiting. September 8th, two months later, while jumping a low wall, felt a sharp, stinging pain in the abdomen. The prongs of the fork could be felt distinctly through the abdominal wall. Operation September 14, 1880. A cut three inches long was made in the epigastric region, along the external border of the left *rectus abdominis* at the point where the body was felt. A circular incision was made around the tines of the fork in the stomach wall, and the fork extracted. The handle was in the pylorus and the prongs in the anterior surface of the stomach. Next day patient doing well. Ice water diet. Complete recovery.

1880. Felizet[28] removed a spoon from a patient of nineteen. The stomach was first inflated with ether, so as to be easily seen and grasped. Discharged well in three weeks.

1882. Dr. Beattie Bean sent an account of a gastrotomy for foreign body to the *Lancet* from Hong Kong. Ito, a young man, swallowed a tooth-brush. Five days afterwards Dr. Hashimoto, principal of the highest medical college in Japan, was called in. He advised opening the stomach. A cross cut was made, and the stomach laid bare. The brush was found embedded with its sharp handle partly through the walls. It was taken out, and both wounds deftly sewn up. The man was reported to be in a fair way to recovery.[29]

1883. Kocher, Berne, removed a broken coin-probang from the stomach of a man thirty-seven years old. It had been there one day, and caused hardly any disturbance. An incision was made through the abdominal wall two centimeters below the margin of the ribs. The stomach was opened by an incision three centimeters long, midway between the greater and lesser curvatures, through which the foreign body was extracted. The wound in the stomach was closed with ten Lembert sutures. Recovery without interruption.[30]

1883. Gussenbauer, Prague. A sword-swallower, nineteen years of age, broke off into his stomach a sword blade twenty-seven centimeters long, two centimeters broad; the broken end was jagged and the point rounded. It remained in his stomach two days. Emetics and suspending by the feet were tried unsuccessfully. On the following day, by sounding and palpation, the foreign body could not be detected. There was fever, vomiting and hiccough. After cutting through the abdominal wall, the point of the sword could be felt wholly in the cavity of the stomach, lying obliquely from above down to the left. After cutting through the stomach wall, the body was removed with little trouble. Death followed in two days from septic peritonitis. The point of the sword had pierced the stomach wall, and the other end had perforated the œsophagus.[30]

1882. Schönborn, Königsberg, reported at the Congress of German surgeons in Berlin, a case of gastrotomy for the removal of a ball of hair from the stomach of a young girl. She had been in the habit of biting off the ends of her hair, and swallowing them to clear her voice. A tumor was found in the left side of the abdomen, supposed to be at the time either spleen, omentum, or floating kidney. It was found to be a bundle of matted hair lying in the stomach as large as two fists. Laparotomy was performed and the tumor easily found. A long incision was made through the anterior wall of the stomach, and the ball of hair found lying free in its cavity. It was removed, and the stomach wound closed with sixty-five Madelung stitches. Both

[21] Iowa Med. Jour., Keokuk, 1854-5, ii, 261-266. Also Boston Med. and Surg. Jour., 1859-60, LXI, 489-493. Also Am. Jour. Med. Sciences, 1855, July, p. 272.
[22] Otis and Credé. Loc. cit.
[23] Credé.' Loc. cit., page 588.
[25] L'Abeille Med. de Paris, 1876, xxxiii, 161-163.
[28] N. Y. Med. Record, xv, June 26, 1879.
[26] Berlin Klin. Wochen., 1880.
[27] Med. Préss. and Circ., N. S., xxxii, 1881, page 321.
[28] Deutsch. Med. Zeit.
[29] Lancet, 1882, ii, 1014.
[30] Credé. Loc. cit., page 582.

wounds healed by first intention, and patient was discharged in three weeks.[31]

1883. Knowlsley Thornton reported a similar case in 1883. That of a young girl of seventeen, who had for some years swallowed the combings of her hair. There was a tumor in the region of her stomach. A transverse incision was made into the stomach to avoid the vessels. The abdominal cut was in the linea alba. A mass of hair nine inches long was removed from the stomach, and the wound closed with fifteen sutures. Next day one sponge was missed. The abdominal wound was re-opened, and the missing sponge found. The patient made a good recovery.[32]

1883. Gerard, in Bourgueil. A man of thirty years had lodged in his stomach for six weeks a piece of elm-wood twenty-one and five-tenths centimeters long. There was pain, nausea and vomiting. Purgatives were used without success. Six weeks later an abscess appeared four centimeters under the border of the ribs, which was opened, and in the bottom of it the foreign body could be felt. Ten centimeters of it was cut off and removed. He gave forty grammes of castor oil, and the rest of the piece came with the stool on the following morning. Recovery in fourteen days.[33]

1885. Billroth. A girl of nineteen years of age swallowed a plate of six teeth. Palpation of the abdomen was painless, and nothing abnormal could be detected. An incision eleven centimeters long, beginning seven centimeters under the ensiform cartilage in the median line, and extending obliquely downward and to the left. After a long search, the foreign body was felt and fixed. It was shoved into a part of the stomach which was drawn forward by two stitches (thread slings). Opening of stomach, extraction, closure with superficial stitches and several Lembert stitches. Stitch of abdominal wall in three stages.[31]

1885. Credé, Dresden. A hair-dresser, twenty-four years of age, swallowed, in his sleep, a plate with eight teeth and two clamps. In the first week there was pain in the pylorus, then nausea, vomiting, sleeplessness, and great excitement. An oblique cut was made, beginning at the ensiform cartilage, parallel to the ribs, twelve centimeters long. Out of this the stomach was drawn. The plate could be felt through the pylorus. A cut was made through the stomach wall, beginning two inches from the pylorus, and extending five centimeters, through which the teeth were removed. The stomach was sewed up with three rows of stitches, and replaced in the abdominal cavity. The abdominal wound was sutured and dressed with iodoform. Very little reaction, no vomiting. Discharged on the twenty-first day in good health.[31]

1886. "Dr. Bernays, of St. Louis, last week successfully performed a gastrotomy upon a tailor, aged forty, for the extraction of an ordinary silver-plated dinner knife nine and a half inches long, which he had swallowed in imitation of the juggler's feat."[34]

Polaillon, of Paris, is said to have removed a foreign body from the stomach this year with recovery.

Following the classification of cases adopted by Credé we have the following tables of gastrotomies:

(*a*) For foreign body in œsophagus.

No.	Operator.	Nature of Body.	Length of Cut.	Result.
1	Richardson, 1886.	Set of teeth.	6 inches.	Recovery.

(*b*) For foreign body in stomach.

I

CASES WHERE THE STOMACH WALLS ARE UNINJURED AND NON-ADHERENT.

No.	Operator.	Nature of Body.	Length of Cut.	Result.
1	Schwab, 1633.	Knife.	Small.	Recovery.
2	Tilan's, 1848.	Silver fork.	2 cm.	Death.
3	J. Bell, 1855.	Bar of lead.	Small.	Recovery.
4	Labbé, 1875–6.	Fork.	Small.	"
5	Billé, 1880.	Silver wire.	2½ cm.	Death.
6	Kocher, 1883.	Coin probang.	3 cm.	Recovery.
7	Gussenbauer, 1883.	Sword blade.	Small.	Death.
8	Schönborn, 1882.	Ball of hair.	Quite large?	Recovery.
9	Thornton, 1883.	Ball of hair.	"	"
10	Billroth, 1885.	Set of teeth.	Small.	"
11	Credé, 1885.	Set of teeth.	5 cm.	"

II

CASES WHERE THE STOMACH WALL IS INJURED AND ADHERENT.

No.	Operation.	Nature of Body.	Result.
1	Florian Mathis, 1602.	Knife.	Recovery.
2	Wesener, 1692	Knife.	"
3	Hübner, 1720.	Knife.	"
4	Frizac, 1786.	Knife.	"
5	Cayroche, 1819.	Silver fork.	"
6	Bertherand, 1823.	Silver spoon.	"
7	Fideli, 1836.	Brass fork.	"
8	Hohlbeck, 1858.	Iron fork.	Death.
9	McKee, 1879.	Copper wire.	Recovery.
10	Fleury, 1890.	Fork.	"
11	Gerard, 1882.	Wood.	"

III

INCOMPLETE OR NOT WELL AUTHENTICATED CASES.

No.	Operation.	Nature of Body.	Result.
1	Reynaud.	Fork.	Recovery.
2	Dr. L———	Silver spoon.	"
3	Garcia, 1830.	Stick of wood.	"
4	Glück, 1856.	Laryngeal probang.	Death.
5	———, 1856.	Fork.	Recovery.
6	Bouchet.	Silver fork.	Unknown
7	Felizet, 1880.	Spoon.	Recovery.
8	Hashimoto, 1882.	Tooth brush.	"
9	Bernays, 1886.	Knife } Not yet reported fully. (?)	
10	Polaillon, 1886.		

From the above tables we see: (1) 12 authentic cases where the stomach, uninjured and non-adherent, has been opened. Of these 3 died. (2) 11 cases where the stomach was injured and adherent, with 10 recoveries and 1 death. (3) 10 the authenticity of which is doubtful, with 6 recoveries, 1 death, and 3 doubtful, or, as yet unreported. Total of 33 cases, with 26 recoveries, 4 deaths, and 3 uncertain. Credé collected 26 cases. Of these the same one is mentioned twice — as J. Bell's and W. Bell's. Of these 25 cases, 21 recovered and 4 died. This list includes all the cases he was able to find, both the authentic and the doubtful. One case recorded by him, that of "J. Meckel" (J. A. McKee, U. S. A.), was probably not a gastrotomy, as the foreign body presented itself at the abdominal wall to the right and below the umbilicus.[35] This leaves his cases as 20 recoveries and 4 deaths.

We may therefore assert that the operation is a very successful one. The numerous recorded deaths which have followed the impaction of foreign bodies in the œsophagus, whether attended by the most violent and painful manifestations of their presence, or even unaccompanied by any symptoms whatever, the constant danger of inflammation, ulceration, perforation of important structures, hæmorrhage and exhaustion, make it imperative that the surgeon should exhaust all the resources of his art to afford relief.

When all other means have failed, and the foreign body is found by measurement to be within reach by œsophagotomy, this should be done as soon as serious symptoms appear. If it is found that the body is within reach from below, that is, more than thirteen, possibly twelve inches from the incision, and if the patient is in danger, as shown by constitutional symptoms, or imperilled by starvation, the stomach should be opened immediately, and attempts made to dislodge. If the symptoms are not urgent, a reasonable time should be allowed for natural efforts to aid in expulsion, but the operation should be done early enough to prevent the secondary changes of ulceration and perforation. If it is demonstrated that the foreign body is beyond the reach of œsophagotomy, and yet too high to be easily reached by the fingers from below, suitable instruments should be introduced through the stomach, guided by the finger, if necessary, for cutting, crushing, grasping or pulling down. I am convinced that in most persons no part of the œsophagus is beyond the reach of the fingers. In some cases there may be a very narrow interval which cannot be reached from one end or the other of the tube, but the surgeon's finger can be brought so near even in these cases that it may fairly be stated there is no part of the œsophageal canal in which a foreign body may become lodged, which cannot be reached with the finger, or, at least, to which an instrument cannot be guided safely and intelligently.

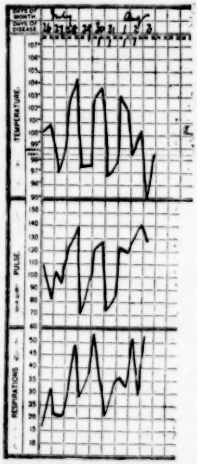
[31] Credé. Loc. cit. Langenbeck's Archiv., Vol. 29, page 609.
[32] Lancet, 1886, No. 3.
[33] Credé. Loc. cit, page 586.
[34] From Med. News of Phila., November 27, page 600.
[35] See similar case by Dr. Sam White of Hudson, who removed spoon from intestines in 1806. Med. Reporter, 1807. 2 Hexade, iv, 367–373.

Hospital Practice and Clinical Memoranda.

A CASE OF MALIGNANT ENDOCARDITIS.[1]

BY F. C. SHATTUCK, M.D.,
Visiting Physician, Massachusetts General Hospital.

A MAN, twenty-six years of age, entered my service at the Massachusetts General Hospital, July 26, 1886. On entrance, he was so deaf that a complete history could not be obtained. It was ascertained that he had long been deaf, but had grown much worse in that respect since his present illness came on. Three months before entrance he began to lose flesh and strength, and to have "hot or cold spells," compelling him to give up work. He later improved somewhat, but was obliged to give up again two weeks ago, on account of increased weakness. For the past ten days he has had marked chills, two or more daily. For the past few days he has vomited every morning. Complains somewhat of soreness of throat. On entrance he had a marked chill, lasting an hour, and recurring twice, accompanied by pain in the præcordial region, which was relieved by a sinapism. He complained also of pain in both hips and thighs, and of great restlessness especially at night. Appetite poor; bowels constipated.



The patient was fairly developed, emaciated, pale; the tongue was clean. The fauces were slightly reddened. He was unable to walk, but could stand, and move his legs freely in bed. There was marked hyperæsthesia from the chest down; the cutaneous and deep reflexes were exaggerated; ankle clonus was present. The internal viscera gave negative results to examination. The mind was clear.

July 28th. Chills have recurred twice daily. Complains of pain in hips. The apex of the heart is in the fifth interspace, just outside the mammillary line. There seems to be tenderness in and above the region of the apex. The first sound at the apex is dull, and accompanied by a faint, systolic souffle, which can be followed toward the pulmonic area. The pulmonic second is accentuated.

July 29th. During examination, twitching came on in the right, and later in the left arm, with lateral and upward movements of the eye-balls, and closure of the lids. The arms were then held in the air, and soon the convulsive movements extended to the legs, and became general. The patient cried out, and seemed to be conscious. The convulsive movements lasted perhaps ten minutes, and were renewed on striking the muscles and the patellar tendons.

July 31st. The chills continued. The heart's action was regular, and the souffle was more distinct, loudest at the apex. During the visit there was a recurrence of the convulsive movements noted the 29th, and again after examination. The face did not change color. The general condition remained about the same, except that he was losing strength. There was a slight yellowish tinge in the skin, but no discoloration of the conjunctivæ; no skin eruption. During the chills the heart's action was very violent, and the patient complained of palpitation.

August 2d. The patient was cheerful, mentally clear, and in no pain. The heart's action was very feeble, but regular; the souffle was scarcely audible.

August 3d. The temperature sank to 95° last night, and remains subnormal. The pulse is regular, but weak. At 2.30, P. M., he told the nurse a chill was coming on, turned over in bed, and died.

Autopsy by Dr. Fitz.

Spinal cord not examined. Brain showed nothing abnormal. *Heart* — Pericardium contained some ℥vi clear, yellow fluid. At apex of right ventricle, in front, was a group of several thick, fibrous villi, each about a quarter of an inch long. Pericardium over left auricle thickened in spots. Heart increased in size perhaps one-fourth. Both sides, especially the right, distended with clotted blood, differentiated into red and white portions. Aortic and pulmonic valves sufficient by hydrostatic test. The two anterior aortic crescents fused, the septum between thickened and retracted. The curtains thickened. From their ventricular surface projected a fleshy nodule of reddish-yellow color, as large as a filbert. It was intimately connected with the valve-curtains, whose consistency was diminished. Both were perforated. The myocardium contained a round, continuous nodule, also as large as a filbert, composed of reddish-gray, puriform material. The other valves showed nothing abnormal. Both ventricles were moderately dilated, the muscular walls of the left ventricle thinned, the muscle gray and opaque. No infectious or other emboli were found, and the other organs presented no noteworthy changes.

To sum up: A young man, for the past three months, has suffered from chills and increasing weakness. After careful examination, the conclusion is reached that the chills are pyæmic, and physical exploration affords but little information as to the source of the pyæmia. There is, however, slight cardiac enlargement, and a souffle at the apex develops and increases under observation. Convulsions appear and recur, more marked in the trunk and extremities than in the face, and the patient dies of exhaustion.

The probable diagnosis of malignant endocarditis was made the third or fourth day after entrance to the hospital, and confirmed by the autopsy. This diagnosis was reached by exclusion, the symptoms being thus explained better than in any other way.

The autopsy showed one thing which was indicated neither by symptoms nor signs during life — namely, an old endocarditis, affecting the aortic valves. The changes in the valves were marked enough to the eye, but, inasmuch as they gave rise to no obstruction at, or regurgitation through the orifice, they had no immediate consequences. If a history of rheumatism, with cardiac complication, had been obtained, as, perhaps, might have been the case had the extreme deafness not prevented communication with the patient in great measure, the diagnosis would have been still

[1] Read at the Section of Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, November 10, 1886.

more clear; for it is well known that malignant endocarditis is more apt to attack a diseased than a healthy valve, though the latter is not exempt.[2] It is interesting to note that the systolic souffle heard during life had its maximum intensity in the region of the apex, and was, consequently, probably dynamic, and quite independent of the changes in the aortic valves. The spinal cord was, unfortunately, not examined, so that we remain in ignorance as to whether the convulsions were functional, or dependent on more or less gross lesions in that centre.

As regards symptoms, malignant endocarditis may well be characterized as multiform. It may be primary, but, in the majority of cases, is secondary. It may be the origin of a general sepsis; simply a portion of a general sepsis starting from a wound or injury, the puerperal process, etc.; or it may develop during the course of a general disease, such as acute rheumatism or pneumonia. The first two types, which were clearly differentiated, were the typhoid and the pyæmic; but, as the number of reported cases has increased, the cardiac, the cerebro-spinal and cerebral, and the malarial types have been added, and are dwelt upon by Osler in his Gulstonian Lectures for 1885. In several instances the affection has been diagnosticated as acute yellow atrophy of the liver during life. In other words, the endocarditic changes may be foreshadowed by no direct symptoms, the affection running its course under the guise of one or another of the severe infectious diseases. If this fact is borne in mind, careful and comprehensive study will lead to the accurate diagnosis of some obscure and anomalous cases. With the greatest care, skill, and knowledge, however, the diagnosis can, in some cases, be first made after the patient has reached the post-mortem table. But the number of these cases will diminish as the knowledge of the affection becomes more general. The above case is a good illustration of the primary pyæmic type, and will, I hope, be of special interest to the Section in connection with the case reported and the discussion evoked last spring by Dr. Grace Wolcott.

CASES OF PERFORATION OF THE APPENDIX CŒCI AND OF INTESTINAL OBSTRUCTION.[1]

BY E. W. CUSHING, M. D.

The first case was a boy eight years old, previously in good health, to whom I was called in September, on a Saturday, finding him with symptoms of acute peritonitis with evidence of fluid in the abdominal cavity.

The history showed that fourteen days previously, while in good health, the boy had been roughly used by some of his playmates who laid him in a trench, and played they were burying him, by putting a paving stone on his belly, one of the largest of them seating himself on the stone in this position.

The patient seemed hurt internally, and was in bed one day, but went to school on the third day, staying there a week, when after some scuffle he had to keep his bed for two or three days longer. However, he went to school again on Monday and Tuesday, on which day he stated that the teacher "licked him like all sixty;" on returning home one of his friends, fourteen years old, kicked him in the belly, so that he doubled up and came in screaming with pain. He went to bed, but his mother did not recognize the severity of the case until Friday, and first secured medical advice on Saturday.

Suspecting rupture or injury of the intestine, I explained the imminent danger and advised laparotomy as a not very hopeful expedient. The mother consenting, Dr. H. O. Marcy was sought in counsel, and he kindly came with a nurse from our hospital and all the needed instruments.

After the usual preparations, Dr. Marcy approving the operation and kindly assisting, I made an incision in the median line and removed about a pint of fœtid pus from among the intestines which were quite adherent and could only be separated with difficulty. It seemed impossible to really search for any rupture owing to the adhesions, and the cœcum and vermiform appendix were quite inaccessible. With the irrigator the thick pus was flushed out of the various pockets, two drainage-tubes inserted and the abdomen sewed up.

The little patient came out of the ether well, was quite comfortable and conscious, but failed and died the next day. It seemed most probable that the first injury had given rise to some circumscribed peritonitis and that the last kick had made this general, perhaps by rupturing the limiting adhesions. Perforation of the appendix was not considered at all probable, owing to the youth of the patient and the clear history of injury.

As the case seemed a clear one of assault, I notified the medical examiner, Dr. Draper, who laid the facts before the district attorney.

The latter declined to interfere on the ground that the fact that the boy continued to play with the others who had used him so roughly, showed that he considered it all as within the limits of "fun," and not as an assault. No malice was charged. Dr. Draper therefore declined to make an autopsy officially.

Dr. Marcy and I made it, however, and found no rupture of the intestine, but a perforation of the vermiform appendix. The latter lay in a sort of abscess cavity, surrounded by strong adhesions, but communicating with the rest of the abdominal cavity. The appendix being removed, was found to have a wide opening or calibre, and in it was a concretion as large as a pea. Over this was an ulceration of the mucous membrane communicating with the abdominal cavity by a fine opening, just large enough to admit a probe.

Whether the injury fourteen days before death had any share in causing the inflammation of the appendix with subsequent perforation, and whether this was at first circumscribed and became general after the kick, it is difficult to decide, but on the whole, and in view of the strength of the adhesions this seems not improbable. The case is instructive, as is also number three, in showing how necessary it is in all such operations to examine the appendix, and how a history of violence, which may be only a coincidence, should not lead to hasty conclusion.

Case II. A single woman, with out apparentcause or error of diet, was taken with a "bilious attack" with vomiting, some colic, etc., at night. I was called in the morning and found symptoms of an ordinary attack of indigestion such as is very common in summer.

There was, however, an abdominal tumor, reaching from two inches to the left of the median line and an

[1] Read at the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, Nov. 10, 1886.

[2] Fusion of two of the aortic cusps, a frequent result of sclerotic changes, was marked in this case.

inch below the umbilicus, across to the right iliac fossa. It was hard, rounded, and immovable. Ordered Hunyadi water, ice pills, and enema. At one o'clock she was comfortable, but soon after vomiting recommenced with much pain. The latter was relieved somewhat by the inunction of oleate of morphine, but the vomiting persisted and nothing came from the bowels after repeated enemata.

By about five o'clock the condition of the patient was becoming grave, for the fluid vomited had a marked intestinal odor, not fæcal, but like what is noticed on opening the abdomen soon after death.

I laid before the family the danger of the situation, explained that the evident obstruction might call for operative measures, and asked for a consultation with Dr. Cheever, who was in the vicinity, and who kindly came, arriving about seven o'clock.

By this time, the condition of the patient was desperate; she was in fact, in full collapse, nearly pulseless, cold, with hollow eyes, pinched nose, the typical Hippocratic countenance.

She had several times vomited large quantities of slightly yellowish, nearly clear, intestinal fluid which welled up without apparent effort; at one time nearly a quart was thus ejected.

On examination, Dr. Cheever thought the patient too weak for laparotomy, and it seemed to us both that the tumor, blocking the whole right iliac region, and being firm and immovable, was probably malignant, and therefore there would be nothing gained by an operation in such a desperate condition. Dr. Cheever therefore left, encouraging me to persist in my efforts to the end, for sometimes such cases rallied.

First, I gave five or six hypodermics of brandy, which, however, did not seem to do much good; by this time she was wholly pulseless and scarcely conscious. Meanwhile, having had some stock soup heated, an enema of this with brandy, about four ounces of the mixture, was given hourly. By the mouth I gave brandy and gum arabic water, in small teaspoonfuls. This remained on the stomach; the enemata also were retained.

About eleven o'clock I heard a sound as of flatus passing through the intestines, which greatly encouraged me, and I gave an enema of about a pint of the soup.

Presently this was followed by a discharge of fæcal matter, then another, the vomiting meanwhile had ceased, and gradually hour by hour the pulse and color returned and the patient rallied.

The next day a number of very large evacuations of old fæcal accumulations took place, and to my surprise the connection between the round abdominal tumor and the right iliac fossa had disappeared.

The tumor remained round, hard, freely movable, about as large as a cocoanut.

A sister of this patient died some years previously with what was said to have been a malignant growth, but the report of the autopsy shows it to have been a fibroid of the uterus blocking up the pelvis and causing directly intestinal obstruction.

In my patient, the obstruction was indirect through accumulated fæces.

It is interesting to note that although water and soup with and without castor oil in enema appeared to have no effect in softening the impacted fæces, yet the warm greasy soup seemed to soak into and soften the mass, at the same time nourishing the patient at a most critical period. However, I think that it would not be safe to expect such a fortunate outcome in a similar case where the nature and previous condition of the tumor (which appears to be ovarian) were known beforehand, but that a prompt laparotomy would be far less dangerous than such a terrific attack.

The continuous vomiting by a sort of reversed intestinal peristalsis is interesting in connection with the next case.

CASE III. I was present to assist Dr. Marcy in a case where there were symptoms of acute intestinal obstruction with vomiting and slight fever in a strong, healthy, muscular man. Dr. Lane, of Cambridge, had exhausted all medical measures and summoned Dr. Marcy on the fifth day of the illness. The latter recommended a laparotomy as the only chance. This was done on the next day, and on opening the abdomen and turning the inflated intestines into sublimated towels it was found that there was a twist of the small intestine by which some three feet of bowel was caught in the crescentic fold of the mesentery. This was remedied, and further search revealed some adhesions and flakes of lymph near the cœcum in which the appendix appeared to be bound down.

The man had had symptoms of perityphlitis some eight months and again some two years previously.

There was in the present case no pus to be found, no sign whatever of a general peritonitis, but as on the rectification of the twist the patient passed flatus several times to the evident relief of the distension of the bowel, it seemed injudicious to attempt to stir up the adhesions around the cœcum, at least through the median opening.

The wound was therefore closed with deep sutures, the ether discontinued, and Dr. Marcy was just finishing up a continuous catgut superficial suture when the patient began to vomit, or rather to regurgitate intestinal contents; he had taken nothing into the stomach for many hours, and very little for several days. Dr. Lane, who was in charge of the ether, did what was indicated, but in a moment the man began to choke.

The regurgitation still continued without any intermission. Dr. Marcy rapidly rolled the patient on his side and face, wiped out his mouth, pulled his tongue forward, but still the fluid came from mouth and nose, over a quart in all. The moment it stopped at all we commenced artificial respiration, which was continued for over two hours by the aid of strong and willing friends: Dr. Marcy made sure that nothing was obstructing the larynx, and even turned the patient nearly upside down to let any fluid run out of the lungs. We never ceased our efforts for a moment. The heart was beating perceptibly all the time, and the air certainly passed freely in and out of the lungs, but there was no response of the respiratory centres, and we had to finally give him up as dead, apparently strangled by inspiring the regurgitated fluids.

At the autopsy no examination of lungs or head was permitted, but we found in the intestines the evidences of acute congestion of the parts which had been constricted, and found the appendix doubled and twisted on itself and adherent at one part, which on separation, opened the lumen of the appendix in two places.

There appeared to be an acute inflammation of the appendix with double perforation of the adherent part, but the whole was shut off from the peritoneal cavity.

Nevertheless, by this irritation it seems that the peristalsis of the bowels was so disturbed that the small intestines became twisted, and when untwisted appear to have discharged their fluid, not fæcal contents, upwards instead of downwards with the fatal result above described.

An accident of this kind in an operation is very rare, and is here reported because of the valuable lesson taught thereby. This case, as well as the first, emphasizes the importance of finding and examining the appendix in all cases of laparotomy for obscure abdominal symptoms.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

NOVEMBER 10th, 1886.

Meeting opened at 8 o'clock, DR. F. I. KNIGHT, in the Chair.

The first business of the evening was the election of a chairman for the ensuing year. The chairman is usually chosen at the first meeting of the year, but the preceding meeting was devoted to the subject of Filtration of Water, and but few members of the Section were present, therefore the election was deferred to this meeting. The secretary stated that the office of chairman had been usually filled by the same incumbent for the period of two years, and that Dr. Knight has served one year and has not expressed himself as averse to a further period of service. Dr. R. H. Fitz thereupon nominated Dr. F. I. Knight as chairman for the coming year. The motion was seconded by several members, and being put by the secretary, was unanimously carried. Dr. Knight responded in a few well-chosen words, thanking the members for the compliment thus done him, and accepted the position.

The first paper of the evening was by DR. P. C. KNAPP, and was entitled

A CASE OF PROFESSIONAL NEUROSIS OF CO-ORDINATION, OF UNUSUAL ORIGIN,

of which the following is an abstract.

The professional neuroses, of which writer's cramp is the commonest form, may arise from any occupation requiring a muscle or a group of muscles to be kept in a more or less firm contraction, together with fine movements of co-ordination. The pathology is still obscure, but some cases closely resemble sub-acute neuritis. The symptoms were arranged by Benedict into three groups: the spastic, the tremulous, and the paralytic forms. Lewis adds to these two other classes of cases, those attended with pain or perturbed sensation, and those attended with vaso-motor or trophic disturbances. The case in question was considered to be probably a sub-acute neuritis, conforming to Lewis's class of cases attended with pain. The patient was a girl of twenty-three, a carpet-pattern setter, who, after pretty constant work, had had for three or four weeks severe pains in the fore-arms, worst in the left arm. The arms felt lifeless, and the trouble was aggravated by attempts at work or even on performing the finer domestic duties, such as sewing. There was no cramp or disturbance of co-ordination. There was a slight diminution of sensation on the ulnar side of the hands, and some tenderness over the nerve-trunks, especially over the left ulnar nerve near the elbow. As the case was considered a professional neurosis, the carpet works were visited, and the process of pattern-setting examined. Each girl sits in front of a table along which run the threads of the warp of the carpet, which are dyed of various colors to make the pattern. With one hand they have to arrange these threads in the proper order, so that they may come into position to make the pattern true; with the other they pick up the individual threads whose tension is wrong, and tighten or loosen as the case requires. Both manipulations require a certain amount of muscular tension and fine co-ordination, but no other case of the trouble had been heard of at the works, and no similar case had been previously reported, to the writer's knowledge.

DR. C. F. FOLSOM was called upon by the chairman, and responded by saying that the exhaustive study of the professional neuroses made by Dr. Knapp left really very little to be said. Dr. Folsom has seen similar cases from other causes, generally associated with some of the severer forms of nervous disease, frequently among those patients suffering from alcoholism, and has observed that the cramp is not infrequently relieved by treatment or by rest, so that the signs of this affection quite disappear.

DR. W. N. BULLARD stated that he had seen an interesting case on the same day, which bears upon the present subject. The patient is suffering from a neuritis of the median nerve with paralysis in the parts supplied by the branches of this nerve, and tenderness along a part of its course down the arm. In this case there was no cramp.

DR. FOLSOM asked what is the pathology of this affection? Is it cramp, or is it paresis?

DR. KNAPP said that it is difficult to determine in most cases what the original lesion may have been. In this case it seems to have been due to an irritation of the nerve. The pathology of all forms of professional neurosis is so obscure that it is often impossible to determine the character of the lesion. The four varieties of this form of neurosis, the paralytic, the spastic, the tremulous and the painful are often associated and united in the same case, so that an accurate analysis is extremely difficult.

DR. F. C. SHATTUCK then read a paper upon

A CASE OF MALIGNANT ENDOCARDITIS.[1]

DR. R. H. FITZ opened the discussion. He stated that these cases are always of interest with reference to their possible method of origin. In certain instances they appear to represent a septic process which arises in the heart without known external cause, and may excite other more remote septic lesions. In other cases the disease has been considered as of secondary character, and as depending upon some primary lesion of infective nature. The valvular lesion has been claimed to be always due to the invasion of the endocardium, either from the surface or from the blood-vessels within the valves, by micro-organisms. Further observation has shown that though such organisms are frequently and perhaps usually present, in acute cases, yet they are not always to be found. In addition, chronic ulcers of the valves are to be recog-

[1] See page 574 of the Journal.

nized with which no evidences of infection are associated, and in which no organisms have been seen.

Although malignant and ulcerative are often used as equivalent, the former is preferable as a diagnostic term, since both ulcers and vegetations may be present in acute and chronic cases of infectious and non-infectious origin. The relation which the immediate cause of the endocarditis bears to the cause of the infective disease in which it occurs as a secondary affection is to be the object of investigation in the early future. Virchow long ago called attention to the rheumatoid group of lesions in infectious diseases, which might be designated as pyæmia, septicæmia, puerperal fever, etc., and considered the puerperal endocarditis as of parasitic origin. Recent experiments not only confirm this view, but make it probable that a variety of organisms may be concerned in producing the endocarditis, and suggest that the local changes and the remote disturbances may vary in accordance with the special organisms found.

DR. BLODGETT spoke of the difficulty in establishing the diagnosis of malignant endocarditis in accordance with any particular rule or system, and considered that each case presents an entirely new study of symptoms, and must be considered quite independently of previous cases. In a patient which he was so fortunate as to have seen in consultation with Dr. Grace Wolcott some months ago, and of which a report was made to this society, the diagnosis of malignant endocarditis was established before death, as the only condition which could reasonably account for the symptoms in the case. The diagnosis was arrived at by exclusion, as Dr. Shattuck states, was the case in his patient. Here, however, there was a clearer history of previous disease of the heart than was ascertainable in Dr. Shattuck's case, and the patient, except in the last hours, could be communicated with, an intelligent account of the subjective conditions could be obtained.

In this case there were the symptoms of septic metastasis to other parts and organs of the body, notably the larger glandular structures, but unfortunately, no sufficient examination of these suspected locations could be made, and the heart itself was the only portion of the affected tissues which was obtained.

DR. HENRY I. BOWDITCH asked if Dr. Shattuck made an examination of the tissues of the endocardium in relation to micro-organism?

DR. SHATTUCK said that no such examination was made, and that in his report of the case he had purposely omitted any allusion to the subject of micro-organisms, as he had nothing to offer in that direction.

DR. FITZ stated that he was responsible for the introduction of the subject of micro-organisms in connection with this discussion. That already found in cases of malignant endocarditis is identical with one found in pus, the golden staphylococcus, and which seems to attend the suppurative process in most cases. It had been cultivated and its identity thus established. Rabbits inoculated with these cultures died in the course of a few days, and the heart presented the appearances characteristic of malignant endocarditis.

DR. SHATTUCK asked Dr. Fitz if he considered that these cases are not a primary form of disease, but dependent upon the existence of previous infective disease of some other portion of the body?

DR. FITZ replied that the majority of cases are not primary, although cases of primary malignant endocarditis apparently occur. In the secondary variety, the cardiac changes appear to be a local expression of the septic condition, and a source of infection should be suspected in all cases.

DR. E. W. CUSHING spoke upon

FATAL PERFORATION OF THE APPENDIX CŒCI.[1]

DR. H. I. BOWDITCH spoke of the great value of free and frank discussion of scientific communications by the society, and commended the courage with which Dr. Cushing had presented his unfavorable cases. It is not difficult to find the reports of successful operations, but there is a great temptation to refrain from publishing the unsuccessful cases. In the case of the boy first reported by Dr. Cushing, the previous maltreatment of the youth by his playfellows would probably be considered by most surgeons as a full and sufficient cause for the subsequent course of the case. It would certainly satisfy all the requirements of the lesions found at the operation and after death, and Dr. Bowditch would think it unnecessary to look further for an exciting cause. If, however, at the time of the operation by laparotomy, the search had been carried further, and the appendix with its contents had been removed, would not the chance of recovery have been materially improved? At the time the abdomen was opened the dangers of the case would not have been seriously increased by the additional exposure of the peritoneum necessary to the prolonged examination for a cause of the symptoms, and it would seem that this should always be done. The abdomen should be thoroughly searched when it is necessary to open it at all, and thus the operation be made to yield the utmost of benefit to the patient. It is advisable to use all the means in our possession, and not to close the abdomen until a thorough search has been made in every part for the cause of the trouble.

DR. CUSHING replied that he could not have done more than he did at the time. The peritoneal adhesions were very tough and resistent, the bowels were matted together in an inextricable manner, and there was nothing to call attention to the appendix. At the same time, Dr. Cushing would do a more extensive operation in another similar case. Had the operation been located over the appendix, the concretion would have been undoubtedly found and removed. At the same time the case is not reported as a glorious triumph of surgery, but as an illustration of the unexpected difficulties which may be encountered in any surgical procedure of so great gravity as the present. Dr. Cushing asked Dr. Fitz if concretions are a frequent occurrence in the appendix at the age of this boy.

DR. FITZ replied that about ten per cent. of cases of inflammed appendix affected patients under ten years of age, and concretions are found in about one-half of all cases. Dr. Fitz added that in the case reported, only a part of the effect of the peritonitis was removed by the operation, and a large amount of the products of inflammation was not disturbed. The course of the case might perhaps have been more favorably modified had the means of surgical relief been more thoroughly carried out. In a similar case known to the speaker, the amount of inflammatory disturbance was so great that another distinct incision of the abdominal parietes was made, and drainage established, and the patient recovered.

DR. CUSHING said that he wished to hear the views of the members upon the unexpected and enormous

[1] See page 575 of this Journal.

regurgitation of liquid from the stomach in the third case reported. This is a new contingency in his experience in abdominal section, and certainly ended the life of one patient in an otherwise favorable condition for relief from operation, by immediate suffocation.

Dr. Fitz asked the reason for the belief that the patient died from suffocation?

Dr. Cushing replied that the patient began to vomit during the operation, but soon all effort at active vomiting ceased and the fluid simply flowed in enormous amount from the mouth, resisting all attempts at its control, and the patient expired.

Dr. Fitz remarked that there seemed no sufficient ground for the statement that the patient died from suffocation, even under the condition described.

Dr. Cushing replied that the man died, anyway, with sudden cessation of respiration, while the heart continued to beat for nearly half an hour.

Dr. Fitz asked if anything were found in the lungs?

Dr. Cushing answered that no autopsy could be obtained.

Dr. Goodwin asked if there were lividity of the face?

Dr. Cushing stated that the man was black. Artificial respiration was commenced and kept up for an hour, but was productive of no improvement in the man's condition.

At this point, Dr. Thomas H. Gage, of Worcester, the President of the Massachusetts Medical Society, was introduced by the chairman in a graceful manner, and in response to a cordial invitation on behalf of the Section he addressed the meeting, returning his thanks for the hearty manner in which he had been received.

The chairman stated that the Secretary desired to present a matter of incidental business to the section. During the past year the secretary has found it necessary to provide certain small sums for the necessary expenses of the section, and the report here presented is an account of those expenditures. The section has no treasury, and there is no provision for meeting these small expenses. There is a committee of finances, to which the matter can be very properly referred, and they will no doubt adopt some method for its liquidation.

By vote the report of the secretary was referred to that committee, with a request that they present a plan for its satisfaction at the next meeting. The section, on motion of Dr. E. W. Cushing, voted to bring before the Suffolk District Medical Society, the question of paying the necessary and proper expenses of the various sections, and the Chairman appointed Dr. Cushing to bring up the matter at the next stated meeting of the Suffolk District Medical Society.

Dr. H. I. Bowditch presented a report of a preliminary character from the committee to whom was referred the subject of the physical culture of children, at the last meeting, in which the committee asked for further time. Dr. Bowditch urged that the Massachusetts Medical Society should take the position that the State should educate the bodies as well as the intellects of the pupils of the public schools. The State should undertake this great work, which is as yet entirely neglected. By vote the report of the committee was laid on the table, and the committee was granted further time.

A communication was read from the Norfolk District Medical Society, announcing that that society had appointed a committee to co-operate with the committee appointed by this society, for the purpose of urging the proper physical training of the children in the public schools.

Adjourned at 9.50 o'clock.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR SURGERY.

G. H. Monks, M.D., Secretary.

November 3d, 1886. Dr. George W. Gay in the Chair.

On motion, Dr. J. C. Warren was by acclamation elected Chairman of the Section for the ensuing year.

Dr. M. H. Richardson then read a paper on

A CASE OF GASTROTOMY FOR THE REMOVAL OF A PLATE OF FALSE TEETH LODGED IN THE LOWER END OF THE ŒSOPHAGUS.[1]

Dr. Cheever asked, in reference to the difficulty in introducing the probang into the œsophagus while the patient was lying down, to what the reader considered this due.

Dr. Richardson did not attempt to account for the difficulty, and said that he wished to pass the probang before operating simply to demonstrate the presence of the teeth in the œsophagus, and that, finding difficulty in so doing, he at once abandoned the attempt.

Dr. Cheever said that his reason for asking the question was that he had met with a similar difficulty in five cases in which he had performed œsophagotomy. The probang had in every case slipped into the glotis and had been guided into the œsophagus with difficulty. In connection with the subject of rectal feeding, he would like to know if in this case, the hunger was in any way abated by rectal injections.

Dr. Richardson replied that the patient never complained of hunger, but was often very thirsty.

Dr. Gay stated that in a patient of his, who, for four days after swallowing a foreign body, received no nourishment except from rectal enemata, hunger was present throughout.

Dr. Cheever remarked, as to the lowest point one can reach in the œsophagus from the wound in œsophagotomy, that he had been able to place his finger tip at a point behind the manubrium, and could there feel the pulsations of the aortic arch; and from behind the arch he had extracted a foreign body. He asked what objections there were in Dr. Richardson's case to making the line of incision closer to the margin of the ribs.

Dr. Richardson replied that he knew of no reason why such an incision should not be made, but that his incision seemed to him, on the whole, the safest and most satisfactory.

In reply to another question from Dr. Cheever, as to the difficulty in drawing out the stomach through the abdominal wound, Dr. Richardson said that he found no difficulty whatever in drawing it out freely enough to allow all subsequent manipulations to take place outside the abdominal wound.

Dr. Barnes asked how long one would, in such cases, be justified in waiting before operating.

[1] See page 567 of the Journal.

DR. RICHARDSON stated that he believed in operating as soon as possible after all attempts to dislodge the foreign body by means of the probang had failed. He also emphasized the importance of doing the operation at one sitting.

DR. CHEEVER stated that, in his experience, a foreign body high up in the œsophagus could hardly be tolerated for a longer time than about three days, for by that time exhaustion or abscess would be pretty sure to occur, but that in case the body is lower down the tube, the symptoms do not appear to be so urgent, and operation may therefore be longer postponed.

DR. MIXTER spoke of the value of the stitch used in this case for the purpose of controlling hæmorrhage from the bloodvessels of the stomach.

DR. GREENOUGH asked if caustics applied to the skin could cause adhesions between the stomach and abdominal wall.

DR. RICHARDSON replied that he did not think it possible.

DR. GAY asked how much of the operator's forearm was introduced into the stomach, and whether there was any difficulty in inserting the fingers into the lower end of the œsophagus.

DR. RICHARDSON said that at the moment of extracting the teeth about one half of his forearm was within the abdomen, and that two fingers entered the œsophagus with the greatest ease.

DR. GAY mentioned a case of his own where a child swallowed a silver quarter-dollar, which lodged in the lower part of the œsophagus, where it remained for five months, and was then coughed up. The child is to-day perfectly well, seven years after the accident.

Dr. Gay agreed with Dr. Cheever as to the extreme urgency of the symptoms in cases where a foreign body has lodged high up in the œsophageal tube.

Recent Literature.

Sixth Biennial Report of the State Board of Health of Maryland. Baltimore, 1886.

THIS document contains the report of the efficient Secretary of the Board, Dr. C. W. Chancellor, and also the proceedings and addresses at a Sanitary Council held in 1884.

Sanitary legislation does not appear to have made material progress in Maryland during the two years embraced in the report. "An act to protect the health of those employed in factories and workshops" has become inoperative in consequence of failure to provide for inspection of such places. In consequence of this neglect the State Board offered the following resolution:

"That the aid of the Board be tendered to His Excellency Governor McLane in rendering effective the provisions of the Act" named above. In view of Dr. Chancellor's thorough and fearless service in earlier years in the inspection of the public institutions of Maryland, such an inspection would undoubtedly have proved to be very valuable. The offer of the Board was not accepted. Another important scheme for the drainage of 400,000 acres of the marsh lands of Maryland appears to have met with a similar fate.

Excellent suggestions are stated in the report with reference to the spread of contagious diseases in public schools, in the form of definite rules, containing, in addition to the ordinary regulations, provision for the exclusion of children living in infected houses where common halls or stairways are used by more than one family; also for the exclusion of children, known to have visited or to have attended funerals at infected houses; also permitting a teacher to exclude children ill with certain diseases not usually classed as dangerous. (Such action may properly be taken with reference to contagious skin diseases).

The proceedings of the Sanitary Council consist of a series of papers and discussions upon various subjects pertaining to public health. Dr. Rohe contributes a concise, clearly-stated paper upon "Dangers in Food." Other papers follow, upon Cholera, Diphtheria, Typhoid Fever, Disposal of the Dead, etc.

The report is especially interesting in consequence of the discussion upon Sewage Disposal, by Colonel Waring and Dr. Chancellor, the former advocating "Irrigation as a means of purifying Sewage," his illustrations being mainly taken from the method practised at Berlin and at Paris. He sums up the argument as follows: "I do not advance the facts and opinions set forth as affecting the argument for nor against the Liernur system as a means of sanitary drainage, but only to uphold, as against the assaults of Liernur's adherents, the absolute safety, efficiency and economy of the well and long-tried system of sewage irrigation."

Dr. Chancellor vigorously defends the Liernur system, and appears to have overlooked the principle that rigid plans of sewerage and sewage disposals cannot be laid down for all communities. That which may be practicable in Amsterdam is not necessarily the *summum bonum* for Baltimore.

A Text-Book of Human Physiology, including Histology and Microscopical Anatomy with Special Reference to the Requirements of Practical Medicine. By DR. L. LANDOIS. Second American, translated from the Fifth German Addition. With Additions by William Stirling, M.D., Sc.D., Brackenburg Professor of Physiology and Histology in Owen's (*sic!*) College, etc., etc. 8vo. pp. xi–905 and 583 Illustrations. Philadelphia: P. Blakiston, Son & Co. 1886.

This handsome octavo is the much improved edition of the "Landois-Stirling" in two awkward volumes which appeared at intervals a year or more ago. An entire change of type has resulted in putting the matter of about 1,700 pages of the former edition into about 900 in the one before us. At the same time a very thorough revision has occurred and the number of illustrations has grown from 494 to the number mentioned above. In its new form this is a book which will deserve many friends and interest every reader. Professor Stirling (who has in the interval taken up Gamgee's work at Manchester) shows in his revision a most commendable desire to have his translation keep as nearly abreast of recent research as is practicable, and his success in this direction is marked.

The aim of the book is to present human physiology in its practical aspects as fully as possible, and at the same time to give due consideration to experimental methods and to the pathological variations which are

not too remote. This treatment of physiology has much to recommend it, and this particular volume will be found excellent as a book of reference for practitioners who desire to refresh and rejuvenate their knowledge without giving too great detail or references to the literature. The pages bristle with the names of those whose researches have settled (or unsettled) the questions discussed, but no references are made. As a book for the student it is open to the objection of being too full of statements which are not sufficiently balanced and which may mislead or confuse a beginner unless he carefully follow a very good course of lectures at the same time. In general, too, there is much too little criticism of the results obtained by the different investigators and the sources of error of the apparatus described and figured are not pointed out as they should be. Having made this general objection to the scheme of the book, we have but little to complain of as to the way in which it is carried out. In every chapter which we have examined we have found abundant evidence that the latest researches have been considered and with much completeness; examples may be found in the sections about peptonuria, the part played by the white corpuscles in nutrition, and the function of the kidney. The present state of our knowledge of urea formation as associated with the liver (although it is mentioned and the truth suggested) would seem to deserve fuller treatment, and Seegen's very interesting work on the relation of the liver to sugar is hardly more than hinted at. The chemical portion of the book has been much improved, but permits of still further completeness. There is also a revision of the physiology of deglutition which puts that section on to its proper basis, but due reference to Walton's work would make the note on the epiglottis more satisfactory. We should also like to see Williams's heart apparatus figured among the instruments used in studying that organ, and perhaps the importance of the use of the galvanometer calls for more detailed mention. If we add that the respiratory quotient on page 212 still does not fit the fraction and that the index, full as it is, ought to have a few more cross references, our grumble is at an end.

It is a matter of regret that we have not the space to point out at proper length the merits of this book, which far outweigh its defects. The translator's task has been well performed, and the text runs generally with great smoothness. The additions are judicious and the increase of illustrations is an improvement upon the original. Altogether, Professor Stirling is to be congratulated on the skill with which his work has been done, and we trust that the number of editions to come will correspond to its merits.

— The Bavarian Government has given $50,000 to the widow of the late Dr. von Gudden, who, it will be remembered, was killed by their late insane monarch.

— A young lady of New York is reported to have been plunged into a serious state of nervous prostration through the indiscretion of a "cheirosophist" who announced the fact of an abrupt break in her "line of life" and assured her that she would certainly die within three months. Palmistry, like some other fads, seems to have a double edge which it doesn't do to fool with.

THE BOSTON

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MEDICAL NOTES.

— Dr. Joseph Schmidt, of Berlin, Germany, writes in the *Therapeutic Gazette* (November 15), of a case of lipoma of the size of a pigeon's egg and of eight years' duration, situated in the carotid region of a medical student of twenty-six years. Dr. Schmidt applied ichthyol with little expectation of its success in promoting absorption. A fifty per cent. solution of the ichthyo-sulphate of ammonium was rubbed into the part (the skin being previously washed with soap and water), three times daily for ten days. At the end of which time the lipoma had become converted into an abscess, which was evacuated and the sides and base of the capsule of the former lipoma were removed through the opening. In twelve days more the wound was entirely healed, and not the slightest trace of the swelling could be found.

NEW YORK.

— At the recent annual meeting of the Board of Managers of the State Charities Aid Association, Dr. Charles Hitchcock was elected Secretary.

— The first meeting of the Section on Public Health, Hygiene, and Legal Medicine of the New York Academy of Medicine, of which Dr. Alexander Hadden is Chairman, and Dr. Henry E. Crampton, Secretary, was held December 3d, when Dr. Blaine, of the Willard Insane Asylum, at Ovid, N. Y., read a paper on "Bovine Tuberculosis: its Communication by Inhalation, Ingestion, and Hereditary Transmission, and its Dangers to Public Health."

— Of the bust of Washington Irving, which Dr. Richard B. Wiener has presented to Central Park, Dr. John C. Peters, who was for a number of years Mr. Irving's physician, says that, as a likeness, it is better than anything extant, except the photograph from which it was made. He thinks, however, that many would have preferred that it should have represented him in the prime of life, as he was sixty-eight or seventy years of age at the time this photograph was taken.

— In a published appeal of the Annual Saturday and Sunday Hospital Collection, it is stated that, although the New York collection was unusually large last year, $5 was contributed in London for every $1 in New York.

— At the annual meeting of the New York Medico-Legal Society, held December 8th, at the Hotel Buckingham, Dr. Charles K. Mills read a paper on "Benjamin Rush"; and Dr. L. W. Baker, of Baldwinsville, Mass., read a paper on "Epilepsy and Forensic Medicine." The meeting was followed by the annual banquet, at which speeches were made by Dr. Charles K. Mills, of the Neurological Association; Johnson, of the New York County Medical; Dr. Gil Wylie, of Bellevue Alumni, and other prominent persons. Hon. Clark Bell was elected President, and Albert Bach, Esq., Secretary of the Society.

— Dr. Henry Slack died at his residence at Fishkill-on-the-Hudson, on the 10th of December, of renal and cardiac disease. He was born in Albany in 1831, and was graduated from Yale College in 1848, and the Albany Medical College in 1851. He subsequently pursued a course of medical studies in Paris, and in 1856, began practice in New York City. During the late war he was a surgeon in the army, and in 1865, removed to Fishkill-on-the-Hudson, where he remained in active practice until a few months since, when failing health compelled him to retire. He was chiefly instrumental in founding the Highlands Hospital at Matteawan, a busy manufacturing village near his home, where his surgical experience gained in the army proved of great service. He was most highly esteemed throughout the community in which he lived, and leaves a widow and three children.

— Prof. Albert R. Leeds, of the Stevens Institute of Technology, at Hoboken, read a paper, November 29th, before the New York Academy of Sciences, on "Purification of Water-Supplies." He has recently visited Great Britain for the purpose of examining the supply of the various cities, and he gave a description of some of the more notable systems in use, those of Glasgow, Leeds, and London being mentioned as among the best. He spoke of the different methods by which purification of water could be accomplished, the oldest, and one of the best of these methods, both as to safety and cheapness, being that by boiling. The process of boiling, however, while it destroyed organisms, had the disadvantage of leaving other impurities, and, in addition, rendered the water unpalatable. In order to make it agreeable to the taste, it was necessary to filter it, and cool it with ice. Having referred to purification by distillation, he described at length the method of oxygenizing large water-supplies by forcing oxygen through the mains, a process of essentially American origin. Professor Leeds gave several illustrations of the successful application of this method to various reservoirs, the water of which had become offensive on account of the decayed vegetable matter or other impurities.

— Dr. John P. Gray, the distinguished Superintendent of the State Lunatic Asylum at Utica, died November 29th, of Bright's disease. Dr. Gray never fully recovered from the shock of his attempted assasination, in 1882, by an insane man named Reimshaw, just after his return from Washington, where he had been acting as chief medical adviser of the Government in the trial of Guiteau for the murder of President Garfield. He received a severe pistol-shot wound of the face, and this was a serious shock to his nervous system, as well as giving rise to persistent and intense neuralgia. A year ago, his friends became alarmed about his condition, and he was induced to spend the winter in Thomasville, Ga. He returned in the spring considerably benefited, but, his health soon giving way again, he went to Europe, where he remained until October. Dr. Gray was born in Centre County, Penn., in 1825, and graduated from Dickinson College, after which he studied medicine, and received the degree of M.D. from the Medical Department of the University of Pennsylvania in 1848. After serving as interne of the Pennsylvania Hospital, he received the appointment of third assistant physician of the New York State Lunatic Asylum at Utica. By 1853, he had risen to the position of first assistant physician and acting superintendent, when he was called to accept the appointment of medical superintendent of the Michigan State Lunatic Asylum. In the following year, however, he accepted the position of superintendent of the asylum at Utica, which he retained up to the time of his death. He became celebrated as an expert in insanity, and his opinion was sought in many noted murder and will cases. He was the editor of the *American Journal of Insanity*, and Professor of Psychological Medicine in Bellevue Hospital Medical College, as well as the Albany Medical College. In 1876, he was President of the Section on Mental Diseases of the International Medical Congress, at Philadelphia; and in 1884, he was elected the second President of the New York State Medical Association, delivering the annual address before the Association at its session in 1885. A widow and three children, one of whom, John P. Gray, Jr., is a physician, survive him. His funeral took place December 2d, at Utica, and was attended by many distinguished members of the profession.

Correspondence.

ARE ALL VENEREAL PATIENTS LIARS?

CAMBRIDGE, N. Y., December 8th, 1886.

MR. EDITOR,— To the editorial question propounded in the JOURNAL, December 2d, "Are all Venereal Patients Liars," I was ready promptly to answer, All *married* ones are. Last evening, however, a married man residing here came into my office saying, "Doctor, I've got the clap, I got it in the strangest way (I think) you ever heard of." I replied I had heard of many singular ways of contracting this disease. He said, "I presume you have heard of getting it from a privy-seat? By sleeping in a strange bed at

hotels and on steamboats?" He also mentioned several other of the *usual* (?) ways of getting it. On informing him I had heard of all these ways, he replied, "I did not get mine in any of these ways; mine was caught by sleeping with a woman of the town in Albany about ten days ago." I told him I had sometimes heard of single men contracting it in that way, but it certainly was, as he said, about the strangest way for a married man I ever heard of.

Very respectfully yours,
T. C. Wallace, M.D.

MILKY TUMORS OF THE AXILLA.

Roxbury (Boston), December 10, 1886.

Mr. Editor,— I find that Dr. Champney, of the Royal Medical and Chirurgical Society (as quoted by Dr. A. H. Johnson in the Journal of December 9, page 548), is mistaken in supposing that the cases of "axillary lump" reported by him are "described for the first time in his paper." Velpeau, "Diseases of the Breast," Sydenham Society's Translation, London, 1856, pages 233–235, cites five cases by Scarpa, Siebold, Moor, Lee, and Stanley (with references), which seem to have been quite similar to those described by Drs. Champney, Johnson, and Sinclair. Siebold's case, in particular, appears to have been the exact counterpart of Johnson's. There were two cysts, one in each axilla, coming on during pregnancy. These tumors were covered with wrinkled skin, like the flesh of a chicken, and, on being squeezed gave exit to genuine milk. After confinement, the exudation ceased by degrees, and the swellings soon after disappeared.

It would seem difficult to determine the exact nature of these tumors, pathologically, without a minute examination of the solid structures in which the fluid is formed.

Yours respectfully,
Edward T. Williams, M.D.

SEVERED DIGITS.

South Paris, Maine, December 13, 1886.

Mr. Editor,— The reunion of severed digits is becoming a matter of considerable interest. I have a case it might be well to place among the others already reported. Some nine years ago, I was called to ride about one-half mile to see a little boy of seven years. Twenty to twenty-five minutes before my arrival he was in the wood-shed, and very generously holding small sticks upon the chopping-block for a sister a year or so younger, to cut with a rather heavy ax. The ax came down too near the hand, and severed the forefinger of the left hand, just *above* the second joint. The cut was made square and complete, the severed end falling among the chips, where I found it about twenty-five minutes later. Warmed it fully in warm water; adjusted it with great care; took two stitches, strapped and splinted carefully. Two years afterwards, it puzzled me to tell which forefinger had been cut. The merest trace of a scar was found. The action of the joint was perfect, the finger was well nourished, the muscles apparently as strong as those of the other forefinger, and the little fellow would not acknowledge there was any numbness. Yours very truly,

O. N. Bradbury, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 4, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Measles.	Diph. & Croup.	Typhoid Fever.
New York	1,439,039	780	344	22.02	12.29	5.38	10.75	1.66
Philadelphia	971,363	—	—	—	—	—	—	—
Brooklyn	600,000	296	124	21.42	10.88	3.74	11.56	.68
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	155	66	20.15	13.00	1.30	10.40	2.60
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	142	48	8.40	16.10	—	4.20	1.40
Cincinnati	325,000	137	—	30.66	10.95	15.33	4.38	5.11
New Orleans	238,000	—	—	—	—	—	—	—
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	79	22	10.16	16.51	—	—	7.62
Pittsburgh	190,000	82	35	24.60	7.38	7.38	8.61	1.23
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	24	5	41.60	20.80	4.16	16.64	—
Charleston	60,145	32	7	15.65	25.00	—	—	3.13
Worcester	68,383	16	8	6.25	6.25	—	6.25	—
Lowell	64,051	18	4	16.66	16 66	—	16.66	—
Cambridge	59,660	21	5	4.76	4.76	—	—	4.76
Fall River	56,863	25	8	8.00	16.00	—	4.00	—
Lynn	45,861	14	1	7.14	28.56	—	7.14	—
Lawrence	38,825	16	4	—	6.25	—	—	—
Springfield	37,577	9	0	11.11	22.22	—	11.11	—
New Bedford	33,393	14	5	—	—	—	—	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	7	3	—	—	—	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	23,709	12	7	33.33	16.66	—	3.33	—
Taunton	23,674	—	—	—	—	—	—	—
Haverhill	21,795	—	—	—	—	—	—	—
Gloucester	21,713	4	0	—	25.00	—	—	—
Brockton	20,783	5	0	20.00	40.00	—	—	—
Newton	19,759	1	1	—	—	—	—	—
Malden	16,407	3	1	—	—	—	—	—
Fitchburg	15,375	4	3	25.00	25.00	—	25.00	—
Waltham	14,609	2	0	—	—	—	—	—
Newburyport	13,716	4	0	—	—	—	—	—
Northampton	12,896	4	2	25.00	—	—	25.00	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 1,906: under five years of age 703: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 380, lung diseases 343, consumption 243, diphtheria and croup 169, measles 83, typhoid fever 39, diarrhœal diseases 35, malarial fever 22, scarlet fever 12, erysipelas 4, cerebro-spinal meningitis five, whooping-cough eight, puerperal fever three. From diarrhœal diseases, New York 15, Boston eight, Brooklyn four, Nashville three, Pittsburgh two, District of Columbia, Charleston and Fall River one each. From malarial fevers, New York and Brooklyn seven each, Baltimore four, District of Columbia, Nashville, Charleston and New Bedford, one each. From scarlet fever, New York five, Cincinnati three, Pittsburgh two, Brooklyn and Nashville one each. From whooping-cough, Brooklyn three, New York and Nashville two each, Boston one. From cerebro-spinal meningitis, New York four, Cincinnati one. From erysipelas, Cincinnati two, Brooklyn and Pittsburgh one each. From puerperal fever, Cincinnati two, Pittsburgh one.

In the 19 cities and greater towns of Massachusetts, with a population of 971,806 (population of the State 1,941,465), the total death-rate for the week was 18.14 against 19.03 and 16.64 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending November 13th the death-rate was 19.1. Deaths reported 3,329: infants under one year of age 866; acute diseases of the respiratory organs (London) 346, measles 103, scarlet fever 39, fever 54, diarrhœa 62, whooping-cough 49, diphtheria 39.

The death-rates ranged from 13.8 in Portsmouth to 27.1 in Leeds; Birmingham 15.9; Blackburn 26.4; Hull 18 3; Leicester 19.4; Liverpool 20.5; London 17.4; Manchester 24.4; Nottingham 16.8; Sheffield 20.8; Sunderland 19.2.

In Edinburgh 19.5; Glasgow 23.8; Dublin 24.5.

For the week ending November 20th, in the Swiss towns, there were 26 deaths from consumption, lung diseases 17, diarrhœal diseases 10, whooping-cough four, typhoid fever three, diphtheria and croup two.

The death-rates were: at Zurich 5.7; Geneva 19.2; Basle 17.0; Berne 19.3.

The meteorological record for the week ending December 4, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
Saturday, Dec. 4, 1886.	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday,...28	30.139	34.8	42.0	24.0	70.0	56.0	64.0	63.0	W.	W.	S.W.	4	14	3	C.	C.	C.	—	—
Monday,.. 29	29.930	46.0	53.0	33 0	82.0	59.0	84.0	75.0	S.	S.	S.W.	10	17	4	F.	F.	C.	—	—
Tuesday,..30	29 752	45.3	48.0	42.0	89.0	85.0	100.0	91.0	W.	N.E.	E.	2	8	10	F.	O.	G.	—	—
Wednes... 1	29.610	38.9	49.0	34.0	99.0	60.0	74.0	78.0	S.	W.	W.	16	16	6	F.	F.	O.	—	—
Thursday, 2	29.563	24.8	35.0	20.6	86.0	53.0	52.0	64.0	S.W.	W.	W.	18	24	27	N.	C.	C.	—	—
Friday, ... 3	29.969	16.5	21.0	12.0	54.0	36.0	76.0	55.0	W.	N.W.	N.W.	18	26	16	C.	C.	C.	—	—
Saturday,. 4	30.459	17.1	25.0	13.0	65.0	29.0	55.0	50.0	N.W.	W.	N.W.	12	14	13	C.	F	F	6.	.25
Mean, the Week.	29.917	31.9	39.0	29.3				68.0											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 4, 1886, TO DECEMBER 10, 1886.

WOODHULL, A. A., major and surgeon. Ordered for duty at post of Fort Leavenworth, Kan. S. O. 138, Department of Missouri, December 3, 1886.

AINSWORTH, F. C., captain and assistant surgeon. Will repair to this city and report in person to the Secretary of War, and on completion of the duty which may be required of him will return to his station (New York city). S. O. 280, A. G. O., December 3, 1886.

AINSWORTH, FRED. C., captain and assistant surgeon. Relieved from duty as Recorder of the Army Medical Examining Board (New York city), and ordered to report in person to the Surgeon General of the army for duty in his office. S. O. 282, A. G. O., December 6, 1886,

BROWN, P. R., captain and assistant surgeon. Leave of absence for seven days, granted by post orders, is extended twenty-three days. S. O. 124, Department of Arizona, November 24, 1886.

TURRILL, H. S., captain and assistant surgeon. Ordered for duty as post surgeon, Fort Spokane, Wash. Ter. S. O. 209, Department of Columbia, November 29, 1886.

CARTER, EDWARD C., captain and assistant surgeon. Leave of absence extended six months. S. O. 281, A. G. O., December 4, 1886.

CLENDENIN, PAUL, first lieutenant and assistant surgeon. Assigned to duty at Fort Davis, Tex. S. O. 166, Department of Texas, November 29, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING DECEMBER 11, 1886.

PERCY, H. T., passed assistant surgeon. Ordered to Naval Academy, Annapolis, Md.

NORFLEET, ERNEST, passed assistant surgeon. Granted three months' sick leave.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Minnesota State Medical Society 1886. St. Paul: H. M. Smyth Printing Co. 1886.

Inter-State Notification: its Principles as Demonstrated in the History of Yellow Fever at Biloxi, Harrison County, Miss, 1886.

Report on Experiments in Trap Siphonage at the Museum of Hygiene, United States Navy Department, Washington, D. C. By Glenn Brown. Washington: Judd & Detweiler. 1886.

The Differential Diagnosis of Scrotal Tumors. By D. A. K. Steele, M.D., Professor of Orthopædie Surgery in the College of Physicians and Surgeons of Chicago. Chicago: (Reprint.)

Report on the Purity of Ice from Onondaga Lake, the Erie Canal at Syracuse, and from Cazenovia Lake, to the State Board of Health of New York. By James T. Gardner, Esq., Consulting Engineer.

Ueber die manuelle Entwicklung des nachfolgenden Kopfes bei räumlichem Missverhältniss. (Nach einem in der Gesellschaft für Geburtshülfe und Gynäkologie zu Berlin gehaltenen Vortrag.) Von A. Martin. (Separat-Abdr. aus Berliner klin. Wochenschr., 1886, No. 40).

Moral Insanity: a Plea for a more exact Cerebral Pathology. By James Hendrie Lloyd, A.M., M.D., Instructor in Electro-Therapeutics in the University of Pennsylvania. A Thesis for Admission into the American Neurological Association, read at its Annual meeting at Long Branch, N. J., July 21-23, 1886. (Reprint.)

Two Papers. By W. H. Daly, M.D., Pittsburgh, Pa. Senior Physician to the Western Pennsylvania Hospital; Senior Physician for Diseases of the Nose, Throat and Chest to the Pittsburgh Free Dispensary; Ex-President of the Allegheny County Medical Society: General Surgeon to the Pittsburgh and Lake Erie Railroad Company; President of the Section of Laryngology of the Ninth International Medical Congress, Washington, D.C., 1887; Member of the British Medical Association, etc. I. Laryngology and its Cognate Branches in America. Read in the Section of Laryngology at the Eighth International Congress, at Copenhagen, Denmark, August, 1884. II. The Simplest and Most Efficient Treatment of Diphtheria. Read before the American Laryngological Association, at its Eighth Annual Congress, Philadelphia, 1886.

Lecture.

SCIENTIFIC MEN AND THEIR DUTIES.[1]

BY JOHN S. BILLINGS, M.D., LL.D., (HARV.), *Surgeon U. S. A.*

I do not believe that Government should undertake scientific work merely or mainly because it is scientific, or because some useful results may possibly be obtained from it. It should do, or cause to be done, such scientific work as is needful for its own information and guidance when such work cannot be done, or cannot be done so cheaply or conveniently by private enterprise. Some kinds of work it can best have done by private contracts, and not by officials; others, by its own officers. To this last class belong those branches of scientific investigation, or the means of promoting them, which require long-continued labor and expenditure on a uniform plan — such as the work of the Government Observatory, of the Government surveys, of the collection of the statistics which are so much needed for legislative guidance, and in which we are at present so deficient, the formation of museums and libraries, and so forth.

Considering the plans and operations of these Government institutions from the point of view of the scientific public, it is highly desirable that they should contribute to the advancement of abstract science, as well as to the special practical ends for which they have been instituted; but from the point of view of the legislator, who has the responsibility of granting the funds for their support, the practical results should receive the chief consideration, and therefore they should be the chief consideration on the part of those who are to administer these trusts. It must be borne in mind that while the average legislator is, in many cases, not qualified to judge *a priori* as to what practical results may be expected from a given plan for scientific work, he is, nevertheless, the court which is to decide the question according to the best evidence which he can get, or, rather, which is brought before him, and it is no unimportant part of the duty of those who are experts in these matters to furnish such evidence.

But in saying that practical results should be the chief consideration of the Government and of its legislative and adminstrative agents, it is not meant that these should be the only considerations. In the carrying out of any extensive piece of work which involves the collection of data, experimental inquiry, or the application of scientific results under new conditions, there is more or less opportunity to increase knowledge at the same time and with comparatively little increased cost. Such opportunity should be taken advantage of, and is also a proper subsidiary reason for adopting one plan of work in preference to another, or for selecting for appointment persons qualified not only to do the particular work which is the main object, but also for other allied work of a more purely scientific character.

On the same principle it seems to me proper and expedient that when permanent Government employees have at times not enough to do in their own departments, and can be usefully employed in scientific work, it is quite legitimate and proper to thus make use of them. For example, it is desirable that this country should have such an organization of its Army and Navy as will permit of rapid expansion when the necessity arises, and this requires that more officers shall be educated and kept in the service than are needed for military and naval duty in time of peace. It has been the policy of the Government to employ some of these officers in work connected with other departments, and especially in work which requires such special training, scientific or administrative, or both, as such officers possess. To this objections are raised, which may be summed up as follows:

First, that such officers ought not to be given posisions which would otherwise be filled by civilian scientists, because these places are more needed by the civilians as a means of earning subsistence, and because it tends to increase the competition for places and to lower salaries. Put in other words, the argument is that it is injurious to the interests of scientific men, taken as a body, that the Government should employ in investigations of work requiring special knowledge and skill men who have been educated and trained at its expense, and who are permanently employed and paid by it. This is analogous to the trades union and the anti-convict labor platform.

The second objection is that Army and Navy officers do not, as a rule, possess the scientific and technical knowledge to properly perform duties lying outside of the sphere of the work for which they have been educated, and that they employ as subordinates really skilled scientific men, who make the plans and do most of the work, but do not receive proper credit for it. The reply to this is that it is a question of fact in each particular case, and that if the officer is able to select and employ good men to prepare the plans and to do the work, this in itself is a very good reason for giving him the duty of such selection and employment.

A third objection is that when an officer of the Army or Navy is detailed for scientific or other special work, the interests of this work and of the public are too often made subordinate to the interests of the naval or military service, more especially in the matter of change of station. For example, civil engineers object to the policy of placing river and harbor improvements in the hands of Army engineers, because one of the objects kept in view by the War Department in making details for this purpose is to vary the duty of the individual officer from time to time so as to give him a wider experience. Hence it may happen that an officer placed on duty in connection with the improvement of certain harbors on the Great Lakes shall, after three or four years, and just as he has gained sufficient experience of the peculiarities of lake work to make his supervision there peculiarly valuable, be transferred to work on the improvement of the Lower Mississippi with which he may be quite unfamiliar.

In like manner Professor Clarke objects to having a laboratory connected with the medical department of the Navy on the ground that the officer in charge is changed every three years; consequently science suffers in order that naval routine may be preserved.

There is force in this class of objections, but the moral I should draw from them is, not that Army and Navy officers should not be allowed to do work outside their own departments or in science, but that when they are put upon such duty, the ordinary routine of change of station every three or four years should not be enforced upon them without careful con-

[1] President's address before the Philosophical Society of Washington, D. C., December 4th, 1886. (Concluded from page 565.)

sideration of the circumstances of the case, and satisfactory evidence that the work on which they are engaged will not suffer by the change. And, as a matter of fact, I believe this has been the policy pursued, and instances could be given where an officer has been kept twenty years at one station for this very reason.

I pass over a number of objections that I have heard made to the employment of Army and Navy officers as administrators, on the ground that they are too "bumptious," or "domineering," or "supercilious," or "finicky," because every one knows what these mean and their force. An Army officer is not necessarily a polished gentleman; neither is a civilian; and a good organizer and administrator, whether officer or civilian, will, at times, and especially to some people, appear arbitrary and dictatorial.

There is another objection to special details of Army or Navy officers for scientific duties which comes not so much from outside persons as from the War Department and the officers themselves, and it is this: Among such officers there are always a certain number who not only prefer special details to routine duty, but who actively seek for such details, who are perpetual candidates for them.

The proportion of men whose ideas as to their own scientific acquirements, merits, and claims to attention are excessive as compared with the ideas of their acquaintances on the same points is not greater in the Army than elsewhere, but when an Army officer is afflicted in this way the attack is sometimes very severe, and the so-called influence which he brings to bear may cause a good deal of annoyance to the Department, even if it be not sufficient to obtain his ends. I have heard officers of high rank, in a fit of impatience under such circumstances, express a most hearty and emphatic wish that no special details were possible, so that lobbying for them should be useless. This, however, seems to me to be too heroic a remedy for the disease, which, after all, only produces comparatively trifling irritation and discomfort.

The same evil exists, to a much greater extent, in the civil branches of the Government. Few persons can fully appreciate the loss of time, the worry, and the annoyance to which the responsible heads of some of our bureaus for scientific work are subjected through the desire of people for official position and for maintenance by the Government. They have to stand always at the bat and protect their wickets from the balls which are bowled at them in every direction, even from behind by some of their own subordinates.

It is true that a great majority of the balls go wide and cause little trouble, and a majority of the bowlers soon get tired and leave the field, but there are generally a few persistent ones who gradually acquire no small degree of skill in discovering the weak or unguarded points, and succeed in making things lively for a time. Considered from the point of view of the public interests, such men are useful, for although they cause some loss of valuable time, and occasionally do a little damage by promoting hostile legislation, yet their criticisms are often worth taking into account; they tend to prevent the machine from getting into a rut, and they promote activity and attention to business on the part of administrative chiefs. It is a saying among dog fanciers that a few fleas on a dog are good for him rather than otherwise, as they compel him to take some exercise under any circumstances.

At all events I think it very doubtful whether the jealousies and desire for position for one's self or one's friends which exist under present circumstances would be materially diminished under any other form of organization, even under a department of science.

Some conflict of interests now exists it is true; some work is duplicated; but neither the conflict nor the duplication are necessarily wholly evil in themselves, nor in so far as they are evil are they necessary parts of the present system. This system is of the nature of a growth; it is organic, and not a mere pudding-stone aggregation of heterogeneous materials, and the wise course is to correct improper bendings and twistings gradually, prune judiciously, and go slow in trying to secure radical changes lest death or permanent deformity result.

It will be seen that in what I have said I have not attempted to eulogize science or scientists in the abstract. I should be very sorry, however, to have given any one the impression that I think they should not be eulogized. Having read a number of eloquent tributes to their importance by way of inducing a proper frame of mind in which to prepare this address, it is possible that I overdid it a little, and was in a sort of reaction stage when I began to write. But the more I have thought on the subject, and the more carefully I have sought to analyze the motives and character of those of my acquaintances who are either engaged in scientific work or who wish to be considered as so doing, and to compare them with those who have no pretensions to science, and who make none, the more I have been convinced that upon the whole the eulogium is the proper thing to give, and that it is not wise to be critical as to the true inwardness of all that we see or hear.

At least nine-tenths of the praises which have been heaped upon scientific men as a body are thoroughly well deserved. Among them are to found a very large proportion of true gentlemen, larger, I think, than is to be found in any other class of men characterized by modesty, unselfishness, scrupulous honesty, and truthfulness, and by the full performance of their family and social duties.

Even their foibles may be likable. A little vanity or thirst for publicity, zeal in claiming priority of discovery, or undue wrath over the other scientist's theory, does not and should not detract from the esteem in which we hold them. A very good way of viewing characteristics which we do not like is to bear in mind that different parts of the brain have different functions; that all of them cannot act at once, and that their tendencies are sometimes contradictory.

There are times when a scientific man does not think scientifically, when he does not want to so think, and possibly when it is best that he should not so think. There is wisdom in Sam. Lawson's remark that "Folks that are always telling you what they don't believe are sort o' stringy and dry. There ain't no 'sorption got out o' not believing nothing." At one time the emotional, at another the intellectual, side of the scientific man has the ascendency, and one must appeal from one state to the other. Were scientific thinking rigorously carried out to practical results in every-day life, there would be some very remarkable social changes, and perhaps some very disagreeable ones.

That scientific pursuits give great pleasure without reference to their utility, or to the fame or profit to

be derived from them; that they tend to make a man good company to himself and to bring him into pleasant association is certain; and that a man's own pleasure and happiness are things to be sought for in his work and companionship is also certain. If in this address I have ventured to hint that this may not be the only, nor even the most important, object in life, that one may be a scientific man, or even a man of science, and yet not be worthy of special reverence, because he may be at the same time an intensely selfish man, and even a vicious man, I hope that it is clearly understood that it is with no intention of depreciating the glory of science or the honor which is due to the large number of scientific gentlemen whom I see around me. A scientific gentleman — all praise to him who merits this title—it is the blue ribbon of our day.

We live in a fortunate time and place—in the early manhood of a mighty nation, and in its capital city, which every year makes more beautiful and richer in the treasures of science, literature, and art which all the keels of the sea and the iron roads of the land are bringing to it. Life implies death; growth presages decay; but we have good reason for hoping that for our country and our people the evil days are yet far off. Yet we may not rest and eat lotus; we may not devote our lives to our own pleasure, even though it be pleasure derived from scientific investigation. No man lives for himself alone; the scientific man should do so least of all. There never was a time when the world had more need of him, and there never was a time when more care was needful, lest his torch should prove a firebrand and destroy more than it illuminates.

The old creeds are quivering; shifting; changing like the colored flames on the surface of the Bessimer crucible. They are being analyzed, and accounted for, and toned down, and explained until many are doubting whether there is any solid substratum beneath, but the instincts which gave those creeds their influence is unchanged.

The religion and philosophies of the Orient seem to have little in common with modern science. The sage of the East did not try to climb the ladder of knowledge step by step. He sought a wisdom which he supposed far superior to all knowledge of earthly phenomena obtainable through the senses. The man of science of the West seeks knowledge by gradual accumulation, striving, by comparison and experiment, to eliminate the errors of individual observations, and doubting the possibility of attaining wisdom in any other way. The knowledge which he has, or seeks, is knowledge which may be acquired partly by individual effort, and partly by coöperation, which requires material resources for its development, the search for which may be organized and pursued through the help of others, which is analogous in some respects to property which may be used for power or pleasure. The theologian and the poet claim that there is a wisdom which is not acquired, but attained to, which cannot be communicated or received at pleasure, which comes in a way vaguely expressed by the words intuition or inspiration, which acts through and upon the emotional, rather than the intellectual faculties, and which, thus acting, is sometimes of irresistible power in exciting and directing the actions of individuals and of communities.

The answer of the modern biologist to the old Hebrew question, *viz.*, "Why are children born with their hands clenched, while men die with their hands wide open?" would not in the least resemble that given by the Rabbis, yet this last it is well that the scientist should also remember: "Because, on entering the world, men would grasp everything, but on leaving, it all slips away." There exist in men certain mental phenomena, the study of which is included in what is known as ethics, and which are usually assumed to depend upon what is called moral law. Whether there is such a law, and whether, if it exists, it can be logically deduced from observed facts in nature, or is only known as a special revelation, are questions upon which scientific men, in their present stage of development, are not agreed. There is not yet any satisfactory scientific basis for what is recognized as sound ethics and morality throughout the civilized world; these rest upon another foundation.

This procession, bearing its lights of all kinds — smoky torches, clear-burning lamps, farthing rushlights, and sputtering brimstone matches — passes through the few centuries of which we have a record, illuminating an area which varies, but which has been growing steadily larger. The individual members of the procession come from, and pass into, shadow and darkness, but the light of the stream remains. Yet it does not seem so much darkness, an infinite night, whence we come and whither we go, as a fog, which, at a little distance, obscures or hides all things, but which, nevertheless, gives the impression that there is light beyond and above it. In this fog we are living and groping, stumbling down blind alleys, only to find that there is no thoroughfare, getting lost, and circling about on our own tracks as on a jumbie prairie; but slowly and irregularly we do seem to be getting on, and to be establishing some points in the survey of the continent of our own ignorance.

In some directions, the man of science claims to lead the way; in others, the artist, the poet, the devotee. Far reaching as the speculations of the man of science may be, ranging from the constitution and nature of a universal protyle, through the building of a universe, to its resolution again into primal matter or modes of motion, he can frame no hypothesis which shall explain consciousness, nor has he any data for a formula which shall tell what becomes of the individual when he disappears in the all-surrounding mist. Does he go on seeking and learning in other ways or other worlds? The great mass of mankind think that they have some information bearing on these questions; but, if so, it is a part of the wisdom of the Orient, and not of the physical or natural science of the Occident. Whether, after death, there shall come increase of knowledge, with increase of desires, and of means of satisfying them, or whether there shall be freedom from all desire, and an end of coming and going, we do not know; nor is there any reason to suppose that it is a part of the plan of the universe that we should know. We do know that the great majority of men think that there are such things as right and duty — God and a future life — and that to each man there comes the opportunity of doing something which he and others recognize to be his duty. The scientific explanation of a part of the process by which this has been brought about, as by natural selection, heredity, education, progressive changes in this or that particular mass of brain-matter, has not much bearing on the practical question of "What to do about it?" But it does, nevertheless, indicate th... it is not a char-

acteristic to be denounced, or opposed, or neglected, since, even in the "struggle-for-existence" theory, it has been, and still is, of immense importance in human social development.

"Four men," says the Talmud, "entered Paradise. One beheld and died. One beheld and lost his senses. One destroyed the young plants. One only entered in peace and came out in peace." Many are the mystic and cabalistic interpretations which have been given of this saying; and if for "Paradise" we read "the world of knowledge," each of you can, no doubt, best interpret the parable for himself. Speaking to a body of scientific men, each of whom has, I hope, also certain unscientific beliefs, desires, hopes, and longings, I will only say: "Be strong and of a good courage." As scientific men, let us try to increase and diffuse knowledge; as men and citizens, let us try to be useful; and, in each capacity, let us do the work that comes to us honestly and thoroughly, and fear not the unknown future.

When we examine that wonderful series of wave-marks which we call the spectrum, we find, as we go downwards, that the vibrations become slower, the dark bands wider, until at last we reach a point where there seems to be no more movement; the blackness is continuous, the ray seems dead. Yet within this year, Langley has found that a very long way lower down, the pulsations again appear, and form, as it were, another spectrum; they never really ceased, but only changed in rhythm, requiring new apparatus or new senses to appreciate them. And it may well be that our human life is only the lower spectrum, and that beyond and above the broad, black band which we call death, there are other modes of impulses — another spectrum — which registers the ceaseless beats of waves from the great central fountain of force, the heart of the universe, in modes of existence of which we can but dimly dream.

Original Articles.

FRACTURES OF THE LOWER END OF THE HUMERUS.[1]

BY J. S. BIGELOW, M.D., DUBUQUE, IOWA.

THE shaft of the humerus may be the seat of fracture in its upper, middle, or lower third, and there may be a variety of fractures of what is more properly termed the *lower end* of the humerus, and to these, owing to their frequency, and the imperfect results which often follow our best efforts at treatment, I wish to call particular attention. The lower portion of this bone, in children up to the tenth year, is broken more than twice as often as the other portions together, so that what I may say refers more particularly to children. The boundary line between the shaft and lower end is not well defined, being a surgical rather than an anatomical division. There are several different fractures of the lower end of this bone. It may be fractured more or less transversely just above the condyles, the line usually running from before backward and upward. One or more lines may extend downward into the joint; the outer portion, the epi-condyle or external condyle, as it is called, may alone be broken off; or the inner condyle may be separated, or the trochlear surface, that part which articulates with the ulna, may be broken, the other parts of the joint remaining in contact. Finally, there may be disjunction of the epiphysis or of its articular portion only. Where the articular portion only, is broken off, Prof. R. W. Smith terms it an infra-condyloid fracture. He claims that the line of junction between the epiphysis and shaft is below the condyles; that when separation of the epiphysis occurs, the condyles always remain above the line of separation and in connection with the shaft; hence the term infra-condyloid fracture. It is needless to say Professor Smith's description does not agree with the description of the ossification of the lower end of the humerus, as given by standard authors on anatomy, and accepted by surgeons generally. If we accept Professor Smith's description, we should say that, up to the eighteenth year, we may meet with two fractures of the lower end of the humerus; one lying above, and one lying below, the condyles. This variety of fractures may be enumerated theoretically, although they are not in practice so readily distinguishable; for frequently the lines of separation are very irregular, two or more varieties coexisting, or a dislocation may add to the difficulties of diagnosis. In any case in childhood where we find a transverse fracture of the lower end of the humerus, the question of separation of the epiphysis is apt to arise, and unless we are somewhat familiar with the anatomical structure and development of the parts, we are liable to error.

Development: The epiphysis consists of four parts. The radial portion of the articular surface commences to ossify at the end of the second year; and from this point extends in, so as to form the chief part of the articular end of the bone. The centre for the inner part of the articular surface appears at the age of twelve. Ossification commences in the internal condyle at about the fiftieth year, and in the external one about the age of thirteen or fourteen. At about the sixteenth or seventeenth year, the external condyle and the two portions of the articulating surface are joined together, and unite with the shaft: About a year later, that is at seventeen or eighteen, the inner condyle unites. Before these parts are united, we may have not only separation of the epiphysis, but either of the centres may become separated from the others, producing fracture of the internal or external condyle, or separation of the trochlea. A point of interest in connection with these fractures is the peculiar anatomical contour of the elbow-joint. The trochlear surface with which the ulna articulates, projects downwards at its inner margin considerably lower than any other portion of the bone. The result is, that when violence of any kind is brought to bear against the forearm, the lower end of the humerus is twisted off. Fractures of the lower end of this bone extend into the joint. Even when they do not, their close proximity to the joint often gives rise to extensive inflammation of the synovial membrane, producing effusion into its cavity, materially increasing the difficulties in recognizing the injury and embarrassing the treatment.

Causes. The causes of these fractures are, generally, falls on the hand or elbow. Frequently this bone is broken by muscular action alone. The deformity is variously modified by the manner of receiving the injury.

[1] Read before the Cedar Valley Medical Society of Iowa.

Symptoms. The symptoms may be obscure: extensive swelling generally sets in early, hence the sooner we see the case and determine correctly the difficulty the better. The upper fragment is generally in front of the lower, due partly to muscular action, partly to the direction of the line of fracture, and partly to the fracturing force, driving the elbow backward. The lower fragment tilts forward. The antero-posterior diameter just above the elbow is increased. Pain is nearly always present. Mobility is generally increased; where the parts are pretty freely separated into the joint, the motion is very free, imparting a loose, rattling sensation when the forearm is rotated. When there is lateral motion a fracture is certain, for there is absolutely no lateral motion in a sound elbow-joint. Luxation does not free the joint in any way. When the arm hangs by the side completely extended, palm forward, the elbow forms a very obtuse angle laterally, the forearm being directed downward and considerably outward. This is due to the trochlear portion of the lower articular surface of the humerus, slanting outward and being longer than the caputellum with which the radius articulates.

If the forearm be fully flexed without any rotation of the humerus, the hand comes up to the outer side of the shoulder joint so far, that with the utmost pronation and flexion of the wrist, the middle finger cannot be brought opposite the mouth. These facts are of importance in the recognition and treatment of fractures in this region. Disjunction of the epiphysis can happen only in childhood or youth. A portion of the bone may be torn off with the epiphysis, or on the other hand the fracture may concern a portion only of the epiphysis, and thus be entirely within the joint. When the fracture is thus low down, there is no perceptible deformity, though there is distinct crepitus. The course and ultimate results of fractures of the lower end of the humerus are apt to be unsatisfactory. A certain amount of stiffening of the elbow-joint is almost always induced, which, as a rule, disappears if the fragments have been replaced in their normal position. The bloodvessels seldom suffer, except in some compound fractures where they may be torn across. Sometimes the circulation may be interfered with by badly applied splints. Wright records a case where an anterior angular splint occluded the main artery for twenty days, and says no permanent harm resulted. Occasionally, serious harm is done to nerves. The musculo-spiral, ulnar, and median nerve, each is at times injured. The ulnar nerve lies very close to the internal condyle, and would seem to be in constant danger. When the posterior interosseous branch of the musculo-spiral or the main trunk itself is injured, a peculiar form of wrist-drop is produced, due to partial or complete paralysis of the supinator and extensor muscles. As a rule, these paralyses improve after a time, still there may be instances where the loss of power is permanent.

The diagnosis in some of these cases of fracture presents no difficulties, in other cases it may be exceedingly obscure. In any doubtful case an anæsthetic should be given, and passive motion resorted to. As a rule, these fractures resemble a backward dislocation of the ulna. In case of fracture, the surgeon can place his thumbs in front of the projection and push the olecranon forward to its place, and easily keep it there until he relaxes his hold. Dislocations are difficult to reduce; but when reduced generally remain in place when the effort is relaxed. The condyles should be located, as they can be, even when swelling is present; and pressure made upon them. If pain is increased, a fracture running into the joint may be suspected; if crepitus is produced a fracture may be regarded as certain. There should be no lateral motion of the forearm, any such motion found establishes a fracture with certainty. Increase in the width of the elbow may be regarded as probably due to fracture involving the joint. These are some of the prominent points on which we must make our diagnosis; but in practice there are shades of difference in the appearances presented, which it would be useless to attempt to describe. We may sum up by saying that fractures and other injuries at the elbow-joint demand more care, tact and judgment for their detection and treatment, than those of any other part of the body.

Prognosis. The elbow is apt to be stiffened after injuries in its neighborhood, so that it is always well to warn friends of what the result may be. All surgeons caution us to warn our patients of what the result may be. This universal warning in regard to fractures at the elbow-joint necessarily implies imperfect results in our treatment of them. The purpose of this paper is, if possible, to offer a method of treatment which will give better results than by the old method of dressing the arm in the flexed position. If the line of fracture is clearly above the epiphysis, the prospects for complete recovery are much more promising; still a very slight tilting of the lower fragment forward, which is so liable to occur, will give rise to some permanent limitation of motion, which cannot be remedied by any treatment, as can be done in mere stiffening of the joint produced by effusion of inflammatory material.

Treatment. The difficulties in the treatment of these fractures are: to keep the fragments in contact and at rest; to prevent the formation of an angle slanting forward; to maintain the oblique line of articulation at the elbow, by avoiding upward pressure on the inner portion of the joint surface of the lower fragment; and to avoid stiffening of the elbow-joint. In order to avoid stiffening, no matter what method of treatment is employed, passive motion must be resorted to. Holmes, Vol. I, says passive motion should be commenced in about three weeks, and quotes Sir Astley Cooper as advocating passive motion to be instituted at the expiration of three weeks after the injury in children, and at a month in adults, and says further that this practice has been followed by most English surgeons. Malgaigne[1] moved the joint on the twentieth day. Erichsen says passive motion should be had recourse to at the end of three weeks in children and in four or five weeks in adults. Dr. Hamilton[1] strongly advised that passive motion be begun within seven days and perhaps earlier, and perseveringly employed from day to day until the cure was accomplished. Dr. Allis, of Philadelphia, condemns early passive motion. He maintains immobility in the extended position until consolidation has taken place, never using passive motion under any circumstances earlier than the fourth week. He says in the milder and middle grades he never has any trouble with functional returns, while in the severer grades there is great injustice done the medical profession, as well as to the patient, by intimating that any course whatever would have insured a prompt return to usefulness.

[1] Holmes, Vol. 1, p. 868.

The difficulty of keeping the fragments in contact and at rest is due to the shortness of the lower fragment, which gives no purchase to any kind of dressing. No matter what kind of an angular splint we apply, the hand and forearm are converted into a powerful bent lever, upon which a very slight amount of force acts most powerfully in loosening the bandages and disturbing the parts above the elbow. We dare not bind on the splints too tightly, as by so doing we endanger the vascular supply to the parts. After a few days, when swelling begins to subside, the constant tendency is for the bandages to become loosened, so that the controlling power of the apparatus is lost.

The difficulty of maintaining the *normal lateral angle* of the forearm upon the arm seems to be frequently overlooked. Any dressings or appliances which push the trochlear surface upward, at the same time push the upper inner angle of the lower fragment past the corresponding portion of the upper fragment, either in front or behind it, and thus destroy the normal lateral angle of the arm.

The general methods of treatment are three: First, and most commonly by apparatus for maintaining the arm in flexion; second, by apparatus for keeping the arm extended; third, without any apparatus, the principle of treatment being to suspend the limb in a sling in the flexed position, changing the angle from time to time in order to prevent anchylosis, the point in this method being that it is better to have a false joint than to have union with anchylosis. Some surgeons of large experience do not consider a false joint near the elbow as a misfortune, but, on the other hand, advocate that method of treatment, having in view the production of such a result. You are no doubt all familiar with the general method of treating these fractures, namely, that of flexing the forearm to about a right angle, and using the old rectangular splint. This method, with some slight modifications of the splint, has been recommended by nearly all surgeons, but these slight modifications of the splint do not change the principle underlying this method, so I think I need not dwell on its description.

The method of using a long straight splint, keeping the arm extended same as in fracture of the olecranon, has not come into general use. Dr. Allis, of Philadelphia, Pa., first described it, and it is therefore termed Allis's method. Dr. McCluer, of Dubuque, deploring his imperfect results in the treatment of these fractures by the old method, began treating them in the extended position as long ago as 1870. The results proving highly satisfactory, he has continued to use and recommend this method. Among the other physicians of Dubuque who have used and are using this method may be mentioned Drs. M. H. Waples and William Watson, the latter of whom is very enthusiastic in its favor, having used it for a number of years past. Dr. Ingalls, in an article in the *Medical News* for January 7, 1882, states that he uses this method for treating all fractures about the elbow-joint that are treated in the Boston City Hospital.

I think this method of treatment fulfils some indications not met by the rectangular splint. First, the normal lateral angle of the arm can be absolutely and perfectly maintained. Second, the arm being dressed extended, has less of a leverage in loosening the bandages and disturbing the parts than when flexed, the forearm and hand then acting as a powerful bent lever, the slightest motion of which must produce more or less disturbance either at the elbow-joint or at the seat of fracture. Third, when dressed in the extended position, the surgeon has better control over the lower fragment. When dressed in the flexed position, the constant tendency of this fragment is to tilt forward and produce a deformity common to these fractures, namely, an angle slanting forward just above the joint. This tendency is avoided by dressing the arm straight. The powerful muscles above the elbow, namely, the biceps and brachialis anticus in front, and the triceps behind, do not produce tilting of the lower fragment one way or the other. They are not attached to this fragment at any point. Their attachments are to the radius and ulna exclusively. These powerful muscles might indirectly produce this deformity by their action, in shortening the humerus, and thus causing an overlapping of the fractured ends, but since we find tilting forward of the fragments in many cases where the fracture is transverse, and the fragments do not overlap, there must be some other agent more constant and more direct in its action in producing this deformity than the muscles above mentioned.

The superficial flexors of the forearm and the pronator radii teres take their origin from the internal condyle and supra condyloid ridge; the superficial extensors and the supinator longus arise from the external condyle and supra condyloid ridge. The pronator radii teres is inserted into a rough ridge at the middle of the outer surface of the radius. The flexor carpi ulnaris is inserted into the pisiform bone — annular ligament and metacarpal bone of little finger. The flexor carpi radialis is inserted into the base of the metacarpal bone of the index finger. The supinator longus into styloid process of radius. The extensor carpi radialis longior and brevior, the extensor communis digitorum, extensor minimi digiti and extensor carpi ulnaris all arise from the external condyle and supra condyloid ridge, and are inserted in a similar manner to the annular ligament and carpal and metacarpal bones.

To illustrate their action in producing displacement of the lower fragment in fractures of the lower end of the humerus we will suppose them all to be attached or inserted into the annular ligament of the wrist joint. When the forearm is brought to a right angle with the arm, the position in which we are taught to dress it after a fracture of the lower end of the humerus, the effect of contraction of the muscles just described is to tilt the upper end of the lower fragment forward. The action of these muscles is reversed. Their point of origin, at the condyles, the fixed point, now becomes their point of insertion, the movable point, and their normal point of insertion, which we have for convenience made to the annular ligament of the wrist, which part they naturally move by their contraction, now becomes the fixed point, the point of origin. Their attachment to the condyles and supra condyloid ridges is above the centre of motion at the elbow-joint. The result is, that when we flex the forearm, and apply the angular splint recommended by nearly all surgeons, the tonic contraction of these muscles produces a deformity which, however slight, will prevent full flexion of the arm.

When the arm is dressed in the flexed position, I see no reason why the superficial extensors may not assist in producing the deformities just mentioned. Their point of attachment to the external condyle and

supra condyloid ridge is above the centre of motion at the elbow-joint, similar to that of the flexors. As soon as the shortest direct line between their point of origin and insertion came in front of the centre of motion at the elbow-joint, their action as extensors would cease. They would then virtually be flexors, and assist in producing the same deformity as that produced by the flexors.

Professor Packard, of Philadelphia, says the method of putting the arm in extension, with the normal lateral angle maintained, and keeping the limb in this posture by means of some immovable apparatus, is a very sound one in theory, and no doubt has given good results. But he thinks the same results may be attained in the flexed position, and with more comfort to the patient. I think I state without fear of contradiction that it is very difficult, or next to impossible, to know whether we have the arm at the proper angle when in the flexed position, and as to the comfort of the patient, I think no method can surpass the extended position. The experience of the surgeons who have used this is that when dressed the patient is perfectly comfortable. A patient with the arm extended and the lateral angle perfectly maintained by one or two straight splints, goes about with the arm hanging by the side, or supported with the other hand, complaining of no pain whatever.

The results of this method of treatment by the surgeons whom I have mentioned have been perfect in every instance. My own observations are limited to four cases, three children and one adult, with perfect results in each case. In consideration of these encouraging results, I think I will be sustained by all who have used this method, in making the broad statement that where the same care, tact, and judgment are used in dressing these fractures in the extended position as are used in dressing them in the flexed position, the results in the former will be better. I would therefore recommend this method of treatment to those who have had imperfect results in the treatment of these fractures by the old method.

TWO CASES OF LABOR COMPLICATED WITH FIBROID TUMORS, WITH REMARKS.[1]

BY W. E. BOARDMAN, M.D.

Case I. Nora C., octopara, was admitted to the Boston Lying-in Hospital during my service, August 1st, 1882, at the request of her attending physician, with the view of having labor induced artificially, on account of the presence of a fibroid tumor which, it was feared, would become a serious complication to the process of labor if pregnancy was allowed to continue until the full term. She was then in the seventh month of pregnancy.

Upon examination after admission, there was found a sessile, interstitial, or rather submucous tumor the size of a fœtal head, in the anterior wall and projecting within the cavity throughout its whole extent, apparently, or at least as far as the examination permitted its exploration, and soft to the touch. The fœtus appeared to be small, though living. The os was patulous, and readily admitted two fingers, so that the tumor could be reached.

[1] Read before the Suffolk District Medical Society, Section for Obstetrics and Gynæcology, Nov. 17, 1886.

Upon consultation it was decided, in the interest of the child, to postpone interference as long as possible, consistent with due regard for the safety of the mother. On the following day, however, at 11 A.M., labor began, the breech presenting, and was completed at 5 A.M. on the next day, without any abnormal incident. The child was stillborn. The following brief extracts from the records are given to illustrate the subsequent history of the case:

August 4th, the day after delivery, A.M. pulse 100, temperature 101.7°, and P.M. pulse 104, temperature 103.5.° Following the custom then prevailing in the hospital, vaginal carbolized douches were given, and also ergot and quinine were administered. The patient continued to be nervous and weak, slept and ate poorly. The pulse and temperature varied but little from day to day until August 7th, when the record states the A.M. pulse 68, temperature 98.3°, P.M. pulse 78, temperature 102.2°, and the lochial discharge became very offensive. The pulse and temperature again rose, and on August 9th, A.M. pulse 104, temperature 101.2°, when, upon examination, the tumor was found to be protruding from the external os. Gradually it came down so as to occupy the vaginal cavity, and on the 13th, the general symptoms became so threatening that, during my absence from the city, Dr. Richardson was summoned, and he removed the entire mass, which was exceedingly foul, and thoroughly cleansed the uterine and vaginal cavities. On the following day, peritonitis developed, and shortly after collapse occurred, and death ensued.

Case II. During my service in January, 1886, N. M., single, primipara, was admitted to the hospital. She stated that, having previously menstruated every two weeks, she was exposed in July, since which time the catamenia had not appeared. About this time she began to suffer with abdominal pains, to relieve which she soon contracted the opium habit, and shortly after consulted Dr. C. P. Strong in regard to some "lumps" in the abdominal cavity. He diagnosticated multiple fibroids, but declined to consider the subject of operation for their removal, chiefly because he suspected associated pregnancy, which subsequent observation proved to be the condition.

January 21st, she complained of symptoms which pointed to the coming on of labor, and, by his advice, she was sent to the hospital on the following day, when, upon examination, a very loud and distinct souffle over the whole lower abdomen, but no fœtal heart, could be heard. By palpation the fundus was felt, reaching just above the umbilicus, irregular in outline. Upon either side of this were several fibroid masses. Per vaginum there was found a retro-vaginal fibroid mass, which filled posteriorly the excavation, obviously with a high attachment to the uterus, and could not be dislodged by pressure with the fingers. In front, and very high up, behind the symphisis, the cervix was found, with the os soft and patulous, admitting more than the finger tip, and the posterior lip notably elongated. It was decided to wait until the pains should become more frequent and regular, in order to ascertain what nature would accomplish before attempting interference in any way. During the day, January 22d, it was found that the cervix gradually came down lower in the pelvis, though to a slight degree, and the fœtal heart could be heard, but not counted at the right of and below the umbilicus.

On the following day, in the morning, the pains

became nearly constant, but slight, the cervix was taken up; the os, the size of a twenty-five cent piece, was easily reached, and found distended by a fluctuating tumor. The membranes obviously had ruptured at 12 M., on the day before. The os continued to dilate gradually but slowly until 3 P.M., when it was fully dilated, and the fluctuating tumor, which was then recognized as an encephalocele, presented at the vulva. In the meantime, the retro-vaginal fibroid had gradually ascended until finally it was entirely above the brim. Soon after this the child was born, having been delayed somewhat in the passage of the head beneath the pubic arch. The fœtus was stillborn. The uterus contracted firmly after the expulsion of the placenta and there was no hæmorrhage. Convalescence was uninterrupted, and she left the hospital February 4th. Upon examination before her departure, the cervix was found to be lacerated bilaterally, and the uterus was anteverted and lying prone beneath the mass of fibroids.

In connection with the relation of these cases it may not be out of place to give a brief *résumé* of our present knowledge concerning fibroid tumors in their relation to conception, pregnancy, parturition, and the post-partum period. It is a well-recognized fact that these tumors predispose to sterility, the subserous variety primarily on account of the uterine displacements which they induce, the interstitial for the same reason, and, if these tend to become the third variety, or submucous, on account of the changes which they induce in the lining membrane of the uterus, and which lead to hæmorrhage and other discharges that ordinarily prevent conception. Still sterility is by no means the absolute rule with either variety, and especially is this true of the subserous form. Another fact is observed, which is notably true of the submucous variety, but not confined to this class, that abortion or premature labor is likely to ensue.

In some cases, however, pregnancy is uninterrupted until the period of normal labor arrives. Meanwhile, it is the common observation that during pregnancy these tumors develop rapidly, and, as a rule, undergo a change in consistence, becoming softer, and at times are transformed more or less into colloid or cystic masses. It is a frequent occurrence, too, that abnormal positions and presentations of the fœtus are occasioned by all varieties of these tumors, and it may be added there appears to be a notable disposition, with the interstitial and submucous varieties, to placenta prævia, or to the implantation of the placenta over the locality of the tumors.

At the time of labor, these tumors may or may not interfere with the normal processes of parturition, according, in the main, to the variety, to the size of the tumor or tumors, their location and mobility, to the existence and extent of adhesions, and to the period of pregnancy.

In the earlier months, the process of abortion or very premature birth very likely will not be complicated to an unusual degree, except, possibly, by hæmorrhage, which, however, ought not to become a source of danger in these cases.

In the later months, and at term, either variety may become a serious obstacle to delivery, and a source of danger either to the mother or to the child, or to both, and in various ways, of which the following will serve as illustrations:

Uterine fibrous polypi may be the occasion of hæmorrhage, or interfere with delivery, from occupying so much of the cavity of the body or cervix as to delay or prevent the passage of the fœtus, or from presenting in front of the fœtus.

Submucous fibroids, if situated above the body and in the fundus, will offer no impediment to delivery, except, perhaps, they occasion irregularity in the uterine contractions, or give rise to hæmorrhage. Situated in the body, however, from their size, which is increased largely during pregnancy, they commonly become a serious impediment, acting in a like manner with the polypi similarly situated.

Interstitial tumors obstruct delivery, as a rule, only when, in their rapid growth during pregnancy, they become more or less submucous in character, or are located in the body or cervix, and attain sufficient size to obstruct mechanically the progress of the fœtus. If they develop outwards, tending to become subserous, they commonly afford no serious obstacle, provided they remain, or can be kept above the brim of the pelvis. Similarly, too, extra-uterine or subserous, or subperitoneal tumors may not seriously complicate labor, provided they do not encroach upon the parturient canal to a degree which will prevent the passage of the fœtus.

If such a tumor is connected with the body of the uterus, and is not tied down by adhesions, the longitudinal contractions of the uterus will serve to elevate or keep it above the brim, but if it originates from the cervix, in some cases it will permanently occupy the pelvis, becoming retro-vaginal; and if it attains to a great size, it will afford an impassable barrier to the expulsion of the fœtus, constituting, in fact, a shortening of the pelvic diameters.

The treatment of these cases, in the light of comparatively recent experience, which has been based upon modern advances in gynæcological, obstetrical, and surgical practice, offers a very wide and interesting field for discussion, which the scope of this paper will not permit me to enter upon, except in a very brief manner.

There is a general consonance of opinion as to the treatment of the polypoid variety of tumors. During pregnancy, hæmorrhage sometimes becomes a dangerous symptom, and in these cases, the ordinary rules of surgical procedure should, and may safely be applied, and the tumor should be removed.

At the time of labor, the general practice is to await the proper dilatation of the os, and then, in the intervals between the pains, to push up the tumor, and allow succeeding pains to expel the presenting part in front of it. Failing in this attempt, or if the tumor already is pressed down in advance of the head, and is too large to admit of the passage of the child without endangering its life, or the mother's soft parts, the only proper method appears to be to remove the entire tumor by means of the ecraseur or the knife, if the pedicle can be reached; otherwise, as much of it as possible should be taken away. Fortunately, in these cases it is quite the rule, I believe, that the pedicle is within reach, attached to the cervix, or just above it. If the pedicle is very small and thin, nature, in her efforts to expel the child, would, without doubt in many cases, rupture the attachment, but at the expense of time and strength, which might be saved to the mother and child to their mutual advantage.

With the submucous variety of fibroids, including the interstitial forms, which, in their development

during pregnancy, tend to become submucous, the practice has been to await the results of nature's efforts, and when these have failed, to resort to some artificial means of delivery; and, as a rule, until lately the child has been sacrificed in the interests of the mother; but, as a rule, too, in these cases the mother has succumbed, sooner or later, to hæmorrhage, exhaustion, shock, or septicæmia.

Even in cases where there has been no serious impediment to delivery, the tumor, softened by the processes incident to its rapid growth during pregnancy, is subjected to so much pressure after the rupture of the membranes and by the uterine contractions, that sloughing and gangrene ensue, and the patient is overwhelmed with septicæmia or pyæmia, as, for instance, in the case which I have reported.

The older obstetric records furnish little but fatal results in these cases, when left to the natural efforts, or where craniotomy or Cæsarean section, either alone or combined, were performed. The study of the details of reported cases appears to disclose one salient fact, namely, that many, if not most, of the immediately fatal results have been due to delay; and bearing in mind that where delivery has, in a surgical sense, been safely accomplished, while the patient subsequently died with septicæmia, the deduction seems clear to me that the safety of both mother and child, in these cases, suggests the following methods of practice, namely: If the tumor is not so large as to offer a serious obstacle to delivery, I should avoid, as much as possible, the compression of it by manual or instrumental delivery directly after the rupture of the membrane, employing artificial dilatation of the os, if required.

In case the tumor is so large as to block the passage of the presenting part so as to form an impassable barrier and is accessible, it would seem to be the best practice, in suitable cases, to employ enucleation, as has been successfully done by Mundé of New York and others. With regard to a resort to version, forceps or craniotomy, similar rules apply as in cases of deformed pelvis, except that with fibroids we must, on the one hand, endeavor to appreciate with considerable accuracy their position, mobility and consistence, and, on the other, the liability to subsequent septicæmia, to which reference has already been made.

Whenever delivery appears to be impossible per *vias naturales*, either under nature's efforts alone or with the intelligent assistance of art, or when there is good reason to believe that these efforts will not only destroy the child, but very likely the mother also, respect for the obstetric art, and more than this, humanity, seems to me clearly to indicate an early resort to laparotomy in some of its forms.

In the light of modern success in abdominal surgery and from a critical study of the cases in recent years which have been the subjects of Cæsarean section, Porro's, Müller's, or Sänger's operations or of laparo-elytrotomy, it seems to me to be evident that the timely resort to one of these methods will, in the future, result in the saving of many maternal and fœtal lives.

If the tumors be interstitial, but tending to the subserous variety, it is probable that delivery will not be interfered with to any great extent, except from the delay sometimes occasioned by irregular contractions, provided the tumors are above the brim of the pelvis. The same is true in general of the subserous tumors.

In many cases, however, as in the second one I have related, there is a tumor occupying the retrovaginal space. If this be not too large or adherent, it may sometimes be pushed above the brim and held there until the fœtus engages or occupies the excavation. If this cannot be done, I believe the essential point to be determined, if possible, is whether the tumor has its origin in the body or above, or in the cervix of the uterus.

If the former is the case and it is not tied down by adhesions, the longitudinal contractions of the uterus will gradually lift it out of the pelvis, as occurred in the case reported, and in this effort nature may often be assisted, and labor will then go on without dangerous obstacles so far as the tumor is concerned. When, on the other hand, the tumor arises from the cervix the contractions are not sufficient to effect this result, and in this case similar rules will apply as with the submucous variety, that is to say, one ought to resort, if it seems necessary on account of the size of the tumor, to version, forceps or craniotomy, and in some of these cases the timely employment of laparo-elytrotomy, especially, would seem to be demanded with the view of affording the best chances to both mother and child, though it is to be kept in mind that with these subperitoneal tumors, while there is a liability to a subsequent peritonitis, there is not the danger of a supervening septicæmia so common after labor complicated with the submucous fibroids.

The question of the advisability of the induction of premature delivery in these cases is one of great importance and calls for the most careful scrutiny in each instance. The consistence of the tumors, their locality and mobility, their size and rate of development during pregnancy, the occurrence or absence of hæmorrhages, the general physical condition of the individual, possibly the history of a previous labor in the same woman with similar complications, all these should be taken into consideration in estimating the probable results of labor at term or in the latest months.

Reasoning from the large fatality incident to the care of most cases which have been recorded in former years, it would appear that an early induction of labor would result in the saving of maternal life, but, on the other hand, in recent years, the desire of obstetricians to save the children has been favored by the knowledge and experience gained in successful abdominal and vaginal surgery, so that we may not err in venturing to assert that in the future the obstetric literature may reverse the direful record with which, so to say, it has been stained in former years, in connection with the treatment of those cases of labor complicated with fibroid tumors, by a resort to the induction of labor after the completion of the seventh month or by laparotomy in some of its forms.

It only remains for me to add a few words concerning the relation of these tumors to the post-partum period.

It is a common experience that most of them rapidly become smaller after labor, sometimes, indeed, they seem to disappear entirely or nearly so, and this is true of the polypoid, intramural and subperitoneal forms. Occasionally the polypoid variety will slough, but it is then quite amenable to treatment.

The submucous variety, however, and too, the interstitial which during the hypertrophy incident to the period of pregnancy, has tended to become submucous,

commonly soon begin to soften more, to slough and become gangrenous, as did the one in the first case I have related. My error then, I believe, was in delay. Possibly an earlier interference with the view of removing the mass, by the curette or otherwise, would have made no difference in the final result, but upon general principles of uterine surgery, it appears to be eminently proper to attack such tumors at once, to remove as much of the sloughing material as we can, and to employ disinfecting agents with the utmost freedom.

Following this method in these cases of submucous tumors, we shall, at least as far as lies in our power, remove the source of systemic poisoning.

The danger from hæmorrhage with such treatment is overstated, for if the necrotic mass be removed quickly you will soon reach healthy tissue, which will not bleed very freely, just as is the case with similar treatment of malignant disease.

Another objection has been made, that by the exposure of such a large freshened surface to the lochial discharges, the chances of septicæmia would be largely multiplied, but I cannot appreciate the justice of this criticism, for surely the lochia cannot be so infectious as the sloughing and gangrenous material of the tumor, and too, the employment of the intrauterine disinfectants, if they serve any good purpose, certainly will tend to render the lochia innocuous.

Clinical Memorandum.

A CASE OF HÆMATOMA OF THE PANCREAS: DEATH IN THREE DAYS.

BY R. W. AMIDON, A.M., M.D., OF NEW YORK.

IN a recent number of the JOURNAL (October 28, 1886), Dr. F. W. Draper narrates five cases of extreme interest, in which pancreatic hæmorrhage coincided with inexplicable sudden death. It may interest those who read his paper to learn of a case in which death was *not* sudden, but in which pancreatic hæmorrhage was the only noteworthy lesion found. The case occurred in my practice several years ago.

A laboring man had been in perfect health until 10, A. M., June 23d. At that hour he was seized with nausea, vomiting, and slight diarrhœa. That evening, attacks of severe pain and cramps in the abdomen and stomach set in, which increased in frequency and force until the next evening, when I first saw him. He was then suffering severely. Countenance pale and haggard, body emaciated, and skin cold. Vomited matter was greenish; later, blackish (did not contain any blood-corpuscles). Frequent cramps run from abdomen into arms, and down legs, causing great muscular rigidity, and making patient cry out with pain. There was intense thirst. The urine was slightly albuminous. The treatment consisted in the free hypodermic use of morphia.

June 25th. The condition was unchanged; no movement from the bowels had occurred. A hypodermic injection of ether (3iss) raised the temperature from 97.6° to 99° F.

The patient died rather unexpectedly June 26th.

The pancreas was enlarged and hard. A hard, disk-shaped tumor, four centimeters in diameter, lay seemingly between the head of the pancreas and duodenum, and adherent to both. It presented, on section, a hard, blackish surface. On more minute examination, the tumor was found to encroach upon the substance of the head of the pancreas. The microscope proved the tumor unquestionably a hæmatoma.

New Instruments.

A NEW EAR-SPECULUM.

BY E. D. SPEAR, M.D.



AN ear-speculum, designed by the writer, was presented to several of the aural surgeons of Boston a year or more ago, was noticed by an aurist of another city in his "Treatise upon Diseases of the Ear," and has been of such service, that a description of it is here offered, that its usefulness may be further extended. Made more especially for an operative instrument, it serves equally well as a demonstrating speculum, fulfiling the object for which aural specula are intended; namely, the straightening of the auditory canal, the turning aside of hairs, bits of cerumen, or epidermal scales, and the removal of obstructing parts of the auricle, as the tragus.

As it is easily retained in position by the elasticity of the cartilaginous canal, and does not, therefore, require holding, the surgeon is enabled by its use to perform the usual operations without the aid of an assistant.

In reality, the instrument consists simply of those portions of an ordinary speculum actually in use during an examination of an ear. It is a short, flattened funnel, with a triangular flange projecting from, and forming one of its sides.

It need only be stated, in directions for its use, that this flange should be placed anteriorly, where it will be found pushing aside the tragus to allow light to enter the canal.

It is manufactured by Tiemann & Co., of New York, and may be obtained of them, or through Messrs. Goldthwaite & Co., in Boston.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION OF OBSTETRICS AND GYNÆCOLOGY.

ROBERT B. DIXON, M.D., SECRETARY.

NOVEMBER 17, 1886, DR. JAMES R. CHADWICK in the chair.

DR. W. E. BOARDMAN read a paper entitled

TWO CASES OF LABOR COMPLICATED WITH FIBROID TUMORS, WITH REMARKS.

DR. DRIVER, in opening the debate, mentioned a case of pregnancy in a woman about thirty-eight years old, complicated with a fibroid, apparently interstitial, filling the posterior *cul-de-sac*, the size of a small child's head, which he had sent to Dr. William L. Richardson, at the Boston Lying-in Hospital, for his opinion, Dr. Driver, seeing no way but to induce

premature labor. The woman had been delivered in England of five living children. The sixth labor was at term, and accomplished by craniotomy in presence of the tumor then not discovered, Dr. James Braithwaite, of Leeds, accoucheur; seventh pregnancy was terminated at the third month, premature labor being induced by Dr. J. Braithwaite; eighth pregnancy terminated at fifth month, premature labor being induced by Dr. J. Braithwaite; ninth pregnancy terminated at about seven and a half months, premature labor being induced by Dr. William L. Richardson at the Boston Lying-in Hospital. The woman went through four labors safely in presence of a fibroid tumor. Dr. Driver examined the woman November 19, 1886. Her health was good, but she could not work as hard as formerly. The os uteri was well forward, and up behind the pubic arch. The posterior *cul-de-sac* was filled by a large, slightly mobile fibroid the size of a child's head, apparently interstitial. No hæmorrhages.

Dr. Chadwick said that he had reported ten cases of pregnancy and labor complicated with fibroid tumors, of which eight occurred in his own practice, at the annual meeting of the Massachusetts Medical Society in 1885. He had found several signs of great aid in diagnosticating this complication, to which little or no reference was made in the text-books. First, presence of an area of flat percussions beyond the limits of the tumor or tumors previously known to be located in the uterus, the enlarging womb being so soft as often not to be felt beside the hard tissues of the tumor. Deep pressure in this region would, in the later months, reveal the fœtal parts. Second, the unduly rapid growth of a fibroid, especially if coincident with the arrest of menstruation. Third, blueish coloration of the vaginal entrance, which, though not always present, when manifest, is an indubitable sign of pregnancy. It has been asserted that this change of color may be produced by fibroids alone; this is an error, as he had established by a special study of the subject for the past ten years.

With regard to abortions, it has been shown by extensive compilations that they are no more frequent in this class of cases than in uncomplicated pregnancies.

With regard to the precise location of the fibroid, whether sub-peritoneal, interstitial or submucous, he had never been able to arrive at any conclusion when the case was first seen after the supervention of pregnancy, except in one where the fibroid presented at the os. The only practical division was into intra-pubic and abdominal growths. In the former group, the tumor obstructed the delivery, and efforts should be made to lift the tumor from out the pelvis, with the patient etherized, before labor set in. If this manœuvre was unsuccessful, premature labor should be induced. In the latter group of cases, delivery would be as easy as usual, except that there might be inertia of the uterus.

Dr. Farlow mentioned that in the only case he had had, the fibroid was at the fundus and subserous. The labor and convalescence were normal, except that the labor was much prolonged. In a case seen in early pregnancy, with the patient etherized and in the knee-chest position, he had succeeded in pushing an impacted fibroid out of the pelvis. After this there was no trouble. He thought that the diagnosis was often difficult, as the fibroid sometimes becomes quite soft during pregnancy. Contractions of part of the uterus, localized contractions of the abdominal muscles and the hard, small parts of the child are often very misleading.

Dr. Call said, in reference to her two cases of labor complicated by fibroids reported by Dr. Chadwick, that one of the patients had since been delivered again. At the first labor the tumor was half as large as the fœtal head, with a broad base, but at the second delivery it was not larger than a goose egg, and was distinctly pediculated. There was severe hæmorrhage after the first delivery from imperfect contraction of the portion of the uterus occupied by the tumor, but the second labor was normal in every respect.

Dr. Boardman, in closing the discussion, remarked that the three points in diagnosis mentioned by the Chairman are familiar. Some of them are subject to doubt, especially the vaginal discoloration of pregnancy; may find it from fibroid without pregnancy. It is difficult to diagnosticate the different varieties of fibroids, but the suggestions in the paper were for those cases in which the diagnosis is made. The submucous variety is the most difficult to make out, and he determines its presence by eliminating the other varieties, in cases where an unusual abdominal enlargement occurs with pregnancy, which manifestly is not due to fluid, or to the presence of more than one child.

OVARIAN TUMORS.

Dr. E. W. Cushing, in response to the request of the Secretary that members bring pathological specimens, presented four ovarian tumors, removed by Dr. H. O. Marcy, with his assistance, during the last two months at their private hospital. Also from the same source, a quantity of glandular tissue removed from the uterus by curetting, and sufficient to fill a four-ounce bottle. All the cases recovered without difficulty; in two of the four ovariotomies, both ovaries were removed.

Case I. A large, multilocular tumor, containing colloid material. Patient was sent to us by Dr. George Galvin, who had recognized its nature, although the patient stated that her former physician, a very distinguished practitioner, had declared that she was pregnant, and as she was a single woman, it had greatly troubled her and her family to have such an assertion made.

The walls of the cyst and of the daughter-cysts were very tough, so much so, that some of them could not be ruptured nor conveniently opened with the trocar, but must be incised. The very extraordinary luck of Tait, who had over a hundred consecutive cases which could be extracted through an average opening of two inches, as he says, is tempting surgeons to try to extract tumors through incisions manifestly too small; in this case, it was necessary to considerably enlarge the incision, in order to break up the smaller cysts, by introducing the hand into the tumor. A wound four inches long heals just as quickly as one of two inches, and gain in the strength of the scar in a small opening is too dearly bought if the operation is unduly prolonged, and all the risks increased, and the tissues of the abdominal wall damaged by trying to extract the semi-solid parts of the tumor through too small an opening.

Case II was a single, slow-growing cyst, with thick wall, and had no points of especial interest.

Case III. A dermoid cyst, with a thick wall; it is interesting because there is a plate of real bone at

the lower portion, with a long spine projecting into the cyst. There is also hair present. The diagnosis was confused by the fact that the Fallopian tube was spread out over the cyst right in the line of incision, and, being congested, it was a little difficult to be sure that the tumor was ovarian and cystic.

By the vagina, the harder, lower part of the cyst could be indistinctly felt, and when first examined, some two months before the operation, it seemed like a uterine fibroid. The patient was one of Dr. G. W. Jones's, of Cambridge, who kindly assisted at the operation.

CASE IV. A simple cyst, without adhesions, and contained twenty-eight pounds of fluid. The second ovary was removed, as it was undergoing cystic degeneration. Also the tubes, which were diseased.

These four specimens represent various forms of ovarian tumors, and two have been filled with water, and show the size, shape, and amount of fluctuation of the tumor.

It is of especial interest to note the length of the place of insertion of the pedicle, in one case four, and in the other over six inches. It is obvious that with the best of silk, and the tightest of knots, there is some danger that the ligature will slip. Of course, this danger is lessened by the customary method of transfixing the pedicle and tying each way, but even with this precaution, the ligature does sometimes slip, or from excessive tightness, strangulates a considerable mass at the end of the stump.

Dr. Marcy's method, as presented by him in a paper before the International Medical Congress, at London, 1881, and practised by him and others with the happiest results, avoids both these dangers. With a long needle in a handle, and having the eye near the point, armed with Kangaroo-tendon, he transfixes the pedicle near one edge, the tendon is unthreaded, and the other end passed through the eye, when the needle is withdrawn; thus some half-inch of the pedicle is enclosed in a loop, both threads crossing each other through one puncture. The needle, without unthreading, is then passed through again at an interval of half an inch or thereabouts, avoiding any visible vessels, is unthreaded then, armed with the free end, and withdrawn. Then another section is included, thus making a shoemaker's stitch, and so the whole long pedicle is sewn across, just as a saddler sews two pieces of leather together, except that the needle representing the awl carries the two ends of the thread alternately back and forth through one puncture, while the saddler uses waxed ends, which cross through the opening made by the awl.

Thus every vessel is tightly ligatured, and when the sewing comes to the further edge of the pedicle, the tendon is knotted, and may then be passed round the whole and knotted again. The peritoneum is then carefully stripped, as was demonstrated to be possible by the late Dr. Mines, of Buffalo, and dissected from the tumor all round, leaving a free border of half an inch.

With a small needle armed with catgut or fine tendon, the peritoneal surface is then gathered in with a "sero-serous" continuous suture. In this way, there is no need of any thermo-cautery. There is no risk of bleeding; the tendon not only remains long enough, but becomes organized as a part of the tissues of the stump.

There is no strangulated, charred, necrotic mass as a source of danger, and no fresh, open surface to absorb any secretions which may collect in the pelvis, and be more or less septic.

These advantages amply pay for the extra time and trouble of properly sewing up the pedicle, for the extra time required is very little, and the trouble is of no consequence.

The case of curetting of the masses of glands, an operation now performed by Dr. Marcy for the fourth time on the same patient, with more and more rapid recurrence after each operation, will be reported in full at a later time. Notwithstanding the amount removed, and the thinness of the uterine wall left, she had an uninterrupted convalescence.

SUFFOLK DISTRICT MEDICAL SOCIETY.
SURGICAL SECTION.

S. J. MIXTER, M.D., SECRETARY.

APRIL 7th, 1886, DR. G. W. GAY presiding.

DR. D. W. CHEEVER reported two cases of

EXOSTOSIS OF FACIAL BONES.

These cases are reported on account of their comparative rarity, only seven cases being mentioned in Heath.

The first patient was a young man of nineteen years. When twelve years old a hard lump was noticed below each eye, gradually increasing in size, until at the time of operation the eyes were very prominent and pushed up, the nose was flattened and the nostrils occluded, the patient presenting the characteristic "frog-face" appearance. He was very desirous of being operated upon.

The deformity existing on both sides of the face, it was not considered best to remove both superior maxillæ. The chief difficulty in the operation seemed to be in preserving the bridge of the nose.

Curved incisions were made over the tumors, and the overlaying parts having been pushed back with the periosteum, the tumors were chiseled off, on one side leaving orbit and nose untouched, and on the other side making a small opening into the nose, the tumor on that side being attached to the nasal bone and the mass harder and having a broader base than that on the other side.

The patient made a good recovery, and when last seen his appearance had much improved, as well as the sense of sight and of smell.

The bony masses removed were fairly hard, but not like the ivory exostoses spoken of by Heath. They were also unlike the bony exostoses with pedicles that generally start from some mucus cavity like the frontal sinus.

The second patient was a young woman twenty years old. The temporal fossa was filled with a hard, even mass under the muscle. A curved incision to the temporal ridge having been made and the flaps turned down, the mass was chiseled away as far as possible. This tumor was harder than those in the other case, and it was difficult to tell when a sufficient amount had been removed, as no line of demarkation existed between tumor and skull.

Now, two years after the operation, there has been no return of the tumor externally, but the patient has defective vision and hearing, and epilepsy. The latter has improved somewhat under bromide, but the prog-

nosis is unfavorable, as the tumor is probably growing inside the skull.

DR. FITZ referred to a possible result of the operation for the removal of orbital exostoses as illustrated by a specimen in the Warren Museum. The patient was operated on by Dr. R. M. Hodges. The exostosis was ivory-like, and projected from the forehead. It was subsequently found to protrude into the cranial cavity.

Although the condition of the patient was satisfactory for a fortnight after the operation, death occurred a few weeks later from abscess of the brain.

In reply to Dr. Gay, the reader said that in the first case there was an enlargement on one lower alveolar process, and the right antrum was also somewhat enlarged. The palate bones met at an acute angle above, and the upper incisors overlapped. These latter deformities were probably congenital.

DR. GAY spoke of a case operated upon by Dr. Charles D. Homans, at the City Hospital, for bony tumor below the eye. The deformity was entirely removed, but the subsequent history of the patient was unknown.

DR. CHEEVER said that he considered the method of operation in these cases to be exceedingly rude, and that the dental or surgical engine with its saws and burrs would do the work much more rapidly and safely.

DR. GEORGE G. HAYWARD reported a case of

COMPOUND COMMINUTED FRACTURE OF THE LEG,

exhibiting the patient.

Dr. Hayward spoke as follows: The case seems of interest not so much from its rarity, as its extreme severity and subsequent good recovery under most unfavorable circumstances. Patient, a sailor, was injured in service during a gale, being caught by the main boom penant and main sheet.

He sustained the following injuries, namely: a compound comminuted fracture of the left leg, with a ragged flesh wound over the seat of fracture to the inner aspect of the leg, four and one-half inches in length, also a deep lacerated wound of the left thigh, six inches long, about the middle and transverse in direction.

He was sent ashore at a small town on the coast of Maine, and seen first by the local physician, and after many hours by quite a prominent surgeon twenty-five miles distant.

Examination of the injuries gave only a faint hope of saving the limb, and this was rendered the less from the fact that the surgeon had no confidence in the local physician with whom he was obliged to leave the case.

The wounds were carefully dressed, and some few fragments of bone removed, antiseptic precautions observed, sutures and splints applied. The after treatment was left with the local physician.

Four days after this, during sleep, the patient turned in such a way as to cause intense pain. He could feel the bones rubbing against each other, and was conscious that the limb was out of place. In this condition he was allowed to remain for six days.

On the 4th of July last, ten days after the injury, I was called upon by one of the summer visitors to take charge of this case.

The following will serve to show the condition of things as found at that time, and also give a brief history of the case.

There was considerable amount of shortening (two and one-half inches); no attempt at union. The bones could be seen from the external wound, and felt gliding past one another, being freely movable. The foot was cold, and no pulsation could be detected.

The wounds were extremely foul; the upper one was almost gangrenous, and a large mass of material had to be trimmed away with the scissors before dressing it. The patient objecting to ether, morphia was given subcutaneously before attempting to disturb the fracture. The reduction was easy, and the limb placed in position in an apparatus adapted to the case, and so arranged that the wounds could be dressed without disturbing the fracture, and rendered fixed by heavy sandbags. Attention was also paid to antiseptic precautions and drainage.

After a few days, the pulsation in the foot became evident, and the general condition of the patient began to improve under tonics and a more liberal diet. At the end of nine weeks there was a firm union, but small, granulating surfaces remained, the limb remaining in the apparatus until everything was perfectly solid.

About the middle of September, a plaster-bandage was substituted, and the patient was allowed to go about on crutches a little. After this, the bandage was split and laced.

During the winter two small fragments of bone came away. He now walks with a slightly thicker sole on the injured side. By measurement, the shortening is scarcely perceptible. He is free from pain, is perfectly well, and able to be at work.

DR. H. W. CUSHING exhibited a patient showing the result of an excision of the elbow, performed four years and a half previously.

Dr. Cushing spoke as follows: The patient I have here to-night, a German, aged sixty, and an artist by profession, was admitted for treatment at the Boston City Hospital on November 15, 1881, for chronic arthritis of the right elbow. His previous history was good. Also no predisposition to disease from hereditary influence was recorded. The only discoverable cause for his condition was that in 1878, three years previous, he had received a contusion of the right elbow from falling on a slippery pavement. No especial trouble was reported until 1879, when slight limitation of arc of extensor appeared. Slight swelling followed the periarticular induration. Gradually-increasing impairment of motion and power of the joint, accompanied by pain. Afterwards, formation of sinuses and prolonged suppuration.

Examination at the time of operation (December 2, 1881), showed such extensive destruction of the articular structures, that an amputation was seriously considered. The patient's general condition also rendered it uncertain whether he could survive the prolonged aftertreatment of an excision.

However, the importance to the patient of preserving the use of his right hand was so great, he being practically dependent on its integrity for its livelihood, that it was decided to make an attempt to retain it. The joint was excised by Dr. W. H. Thorndike through a post-longitudinal incision in the usual way. The humerus was divided above the condyles; the ulnar and radius in a horizontal plane at the level of the radial neck.

The patient remained in the hospital till May 2, 1882, and was then transferred to the Out-patient Depart-

ment. His general condition at this time was good. There was a slight suppuration from several unclosed sinuses about the elbow, at the ends of which a probe grated over an uncovered bony surface. There was limited motion of the elbow in all directions. Motion of the fingers slight, but gradually returning.

In June, 1882, seven months after operation, fixed apparatus was omitted, and from this time until June, 1883, thirteen months after operation, when the patient was discharged well, the treatment consisted in cleanliness, by irrigation and absorbent dressings, usually gauze or oakum, alternating with stimulating lotions. Prolonged, systematic, passive motion and massage seem to have aided much in restoring the mobility of the hand and fingers.

From January, 1883, till now, the power of the elbow, and mobility of the fingers have steadily increased, so that now the patient is able to use his hand at his work as well as formerly. The elbow has gradually changed from a mere "flail" to a joint of considerable power and utility. Diminished power of extension of the wrist, and diminished power of grasping objects with the fingers, are the only noticeable abnormal conditions of this part of the extremity.

The patient can carry articles of considerable weight, can drive nails with a hammer, raise the hand to his mouth, and performs his work as an artist so as to support himself and family — a result which, when the age of the patient and the condition of the articulation at the time of operation, are considered, is exceedingly satisfactory both to patient and surgeon.

DR. CUSHING also reported a case of

PHTHISIS, TUBERCULOUS SYNOVITIS, AND CARIES OF THE WRIST: EXCISION, WITH RECOVERY FROM LOCAL CONDITION.

The patient first had pleuritis about two years ago. This was followed by trouble in the wrist-joint, which gradually increased until the time of the operation, September 8, 1885, when there was marked tuberculous disease of the left apex, and advanced caries of the left wrist. This was excised by a median dorsal incision (Langenbeck's operation). In eight months and three days from the operation, the wrist was completely healed. The patient's pulmonary trouble remains about the same. He has occasionally slight cough and night-sweats, but the general condition is steadily improving, and the power and usefulness of the hand is also increasing, so that it promises to become an exceedingly useful member.

THE NEW YORK ACADEMY OF MEDICINE.

STATED meeting, December 2, 1886.

DR. J. BLAKE WHITE presented a

PHTHISICAL LUNG INJECTED WITH CARBOLIZED IODINE.

He said that the results which he had met with during the past year from injecting diseased lungs had greatly excited his enthusiasm. Theoretically, intrapulmonary medication seemed to be a very rational method of treatment, and practically it was found to be of much efficacy. Having referred to the success met with by Drs. Pepper, Robinson, and others, he mentioned a case of his own in which recovery took place, and the course of which was watched with interest by three professional friends. The preparation which he prepared for injections was a mixture of carbolic acid and tincture of iodine, to which was added a small amount of morphia and atropia. In the cases in which he had employed it all the symptoms had been relieved, the cough being controlled, expectoration diminished, sleep improved, and night-sweats checked. The specimen presented was the left lung of a patient in whose case, although hopeless as regards cure at the time the first injection was made, the effect of the treatment was very marked and gratifying.

The patient was a milk-man, a native of Ireland, and forty-six years of age, and Dr. White gave a somewhat detailed history of the case. When first seen by him at Charity Hospital last summer, he was in the third stage of phthisis, with a large cavity in the upper part of the left lung, which was in a state of active suppuration. There was profuse expectoration, exhausting night-sweats, and all the ordinary symptoms of advanced pulmonary tuberculosis. On the 19th of July, the first injection of ten minims of carbolized iodine was made in the first intercostal space. It was followed by no reaction, and there was immediate and marked improvement in the patient's condition. The following week a second injection of the same character and quantity was given, and this also, without any reaction whatever, was followed by marked improvement in all the symptoms. The man felt so much better, indeed, that he was enabled to make an amount of physical exertion that, before the treatment, would have been impossible. On the 30th of August, a third injection was made, this time twenty-five minims of the carbolized iodine being employed. It was attended by a brief paroxysm of coughing, but no bad results followed, and marked improvement was subsequently noted in the symptoms as before. Dr. White's term of service at the hospital now expired, and no more injections were made.

The patient died October 19th, and at the autopsy the left lung was found bound down everywhere by the most extensive pluritic adhesions. The pericardium was also involved by adhesions to a very marked extent. Much of the tissue of the diseased lung presented a cirrhotic appearance, and in the vicinity of the cavity in the apex a considerable space was found to be tinged by the injections. The upper portions, where the injections had been made, presented a marked contrast to the lower portions, where the tissues were in a state of advanced disintegration. During life, also, the auscultatory signs had indicated a dry condition of the upper parts very different from that met with in the lower. Very little pus was found in the cavity.

DR. WILLIAM P. NORTHRUP read a paper on

LARYNGEAL DIPHTHERIA; INTUBATION AND PATHOLOGICAL ANATOMY.

He commenced by alluding to the conflict of Bouchat in behalf of intubation of the larynx with Trousseau and the mass of the profession in Paris in 1858, which ended in the official declaration by the Academy of Medicine that this procedure was impracticable. It was true, he said, that Bouchat's seven cases all terminated unfavorably, but this fact at least was proven, that the larynx will bear a tube. It was also shown that the stenosis had been relieved in Bouchat's cases. Having described Bouchat's tube, he said that nothing more was heard of the method for nearly thirty years,

when it was revived by a Fellow of the New York Academy of Medicine, Dr. Joseph O'Dwyer, in a manner which at once compelled the attention of the entire profession.

Dr. Northrup then proceeded to give the statistics of all the cases of death from laryngeal diphtheria which had occurred among the children connected with the New York Foundling Asylum during the past five years. The number of children belonging to the institution is about 1,800 per annum, of which 1,100 are cared for by paid nurses in their own homes, and the rest accommodated in the asylum buildings. There were 87 deaths in all from this cause, of which 50 were in females and 37 in males. The greatest mortality was found to be between the ages of three and four years. In 56 the membranes began to form in the larynx before or simultaneously with the exudation in the pharynx. In two cases croup was the first symptom noticed, and death occurred within twenty hours. In 54 cases there was pneumonia, and broncho-pneumonia was very frequently met with. 27 children died from extension of the membranes into the bronchi, and in 29 the pneumonia was sufficiently severe to cause death alone. The highest temperature met with was, in 19, 104°, in 15, 105°, in three, 106°, in two, 103°, and in one, 107°. Having given statistics of the extent of the membranous exudation, he said that in all but three of the 87 cases the membranes were very extensive. Interstitial emphysema occurred in eight cases. There were 51 cases of primary diphtheria, and 31 in which the disease was nearly or remotely related to scarlatina or measles.

Dr. Northrup exhibited a set of O'Dwyer's instruments for intubation, and explained the method of introducing and extracting the tube into and from the larynx. It was important, he said, that the child, wrapped in a blanket, should be held upright in the arms of the nurse, who by grasping the elbows could secure a firm position without interfering with respiration. The gag was to be inserted in the left angle of the mouth, well back between the teeth, and opened widely. An assistant held the head, thrown somewhat back, while the operator used his left index finger to hook up the epiglottis and direct the tube into the larynx. It was better to make several short attempts to introduce the tube than one prolonged effort, on account of the interference with respiration thus caused. The extraction of the tube was more difficult than its introduction, and Dr. Northrup, at the suggestion of Dr. O'Dwyer, recommended that physicians should practice both introduction and extraction upon the cadaver.

Those beginning to practice intubation, he estimated, were apt to use too small a tube, with the result that it was coughed up. Care should be taken, therefore, always to use the size of tube suitable for the age of the child, as indicated by the scale accompanying each set of instruments. There was, however, no danger of the tube slipping down into the trachea, as some seemed to fear; since the head of the tube could not fail to be caught by the cricoid cartilage, which was situated at the narrowest point of the passage. There was also no danger of ulceration of the vocal cords being caused by the tube.

If the condition of the child was favorable for forty-eight hours after the insertion of the tube, the prognosis would be good; but it was entirely unsafe to give a favorable prognosis at any period before the expiration of the forty-eight hours. Not infrequently the greatest possible relief was temporarily secured by intubation in cases which afterwards terminated fatally by the extension of the membrane downwards or by the occurrence of pneumonia. Dr. Northrup also spoke a word of caution in regard to withdrawing the tube too soon. Whether it would be advisable to re-introduce the latter in any case would depend on the condition indicated by an examination of the chest. If on auscultation the vesicular murmur was normal, there was no cause for uneasiness; but if it was found that the air could not get well into the lungs, especially the posterior portions, it was time to re-introduce the tube. The condition of the pulse also served as a valuable guide to the experienced. In many cases the tube could be removed with safety in five or six days.

After referring to the kinds of food which are most useful and most easily taken after intubation, he referred to the cases reported by Dr. Jennings, of Detroit. They were four in number, and as all proved fatal, Dr. Jennings recommended tracheotomy in preference. It was a fact, however, that all his cases were of a very unfavorable character. Still, he recommended intubation in children under fifteen months old and in hopeless cases; believing that it was a supplement to, though not a substitute for tracheotomy.

Having mentioned that O'Dwyer's tubes were of great service in stenosis of the larynx in adults, and especially when the condition was due to syphilis, Dr. Northrup gave some general conclusions in regard to intubation, among which were the following: It relieves dyspnœa due to laryngeal stenosis, and is open to few objections. It is comparatively simple, and is also free from danger. No anæsthetic is required, nor is there need of a trained assistant. There is no fresh wound to serve as a new focus for infection. If intubation proves inefficacious, tracheotomy can still be performed. Intubation, however, he said, had one conspicuous fault, namely, that it embarrasses and sometimes interferes with deglutition. There was also one danger connected with it. The tube might possibly push some of the tenacious membrane down before it, and thus cause a blocking up of the trachea below.

Did it meet the requirements? The statistics showed that it undoubtedly did. Waxham had had ninety-six cases and O'Dwyer forty-eight, and in the one hundred and sixty-five cases which had thus far been reported, no less than twenty-eight and one-half per cent. had been saved. It was to be remembered, too, that the method was still new. Valuable experience had been gained, and it could scarcely be doubted that in the future the results would be even more favorable. The statistics of tracheotomy showed no such satisfactory result as this, and he believed that if all the fatal cases of the operation were reported, the percentage of mortality would be considerably larger than it now appears.

In the discussion which followed, Dr. Francis Huber said that he had performed intubation eleven times. The special conditions for which he had resorted to it were aphonia, stridulous expiration, and extreme recession of the chest-walls, above and below the sternum. He gave a brief sketch of each of his cases, and then stated that out of the eleven, there had been four recoveries, while one child was still wearing

the tube. Five had died, and one other, in which he had just practised intubation, would probably also prove fatal. These results were much better than he had obtained with tracheotomy. He had performed this twelve times, but had saved only two out of the twelve children. He stated also that in all his cases of intubation, the method was resorted to very late. In conclusion, he exhibited a modification of the O'Dwyer gag, devised by his friend, Dr. Denhard, who had also had eleven cases of intubation. Five of them were successful, and all of the eleven, like his own, were late cases.

DR. A. S. HUNTER related two cases, both severe, in consultation, in which he had practised intubation. The first was that of a child six years or age, who had been suffering from membranous croup for two days. The stenosis was extreme, and pulmonary œdema was coming on. He introduced the tube with little difficulty, and the relief was immediate and very marked. After forty-eight hours, however, he saw the patient again, and found the respiration very rapid. It had great difficulty in swallowing, and he found that by giving it a large quantity of nourishment at a time, it did better than if the attempt was made to give it by the teaspoonful. The pulmonary trouble was now so great that it was evident that the child could live but a few hours longer. He therefore removed the tube, and found that it breathed well without it. Death occurred about seven hours afterward.

The second case was in a child two and a half years old, with diphtheria, who had a temperature of 103.5°. There was marked stenosis of the larynx, and it was almost completely asphyxiated. The relief afforded by intubation was, as in the other case, prompt and satisfactory. The next day, however, the child coughed the tube up, and it was re-introduced by the attending physician, but death ensued in five or six hours later. Dr. Hunter stated that he had practised intubation five or six times on the cadaver before he attempted it on the living subject.

DR. E. L. PARTRIDGE said that Dr. Northrup had mentioned that the only danger from intubation was the possible detachment of portions of membrane, which might act as a diaphragm in the trachea below the tube. The same objection held true, however, in regard to tracheotomy, and he referred to a case of this operation, in which fatal obstruction occurred in the manner described.

DR. A. G. CAILLE said that he had had one case of intubation, but the procedure was resorted to at so late a period, that he thought it should not go on record. He believed that the introduction of the tube would be rendered easier if the special points of the anatomy of the parts were carefully borne in mind.

Recent Literature.

On the Healing of Arteries after Ligature in Man and Animals. By J. COLLINS WARREN, M.D. New York: Wm. Wood & Co. 1886.

In this book, the author has given the results of his own investigations on a most interesting subject. A long line of experiments, carefully conducted and closely observed, are the basis for his deductions. These differ in many essential points from those of other investigators, which are brought together in a historical abstract in the introductory chapter. The main points brought out are the length of time required to fully complete the healing, from three to six months being necessary. Then the part played by the new tissue formed about the vessel, and which acts as a callus, both without and within, to support it until entirely occluded. Further, the participation of the muscular coat in the process, which has been disregarded by other writers. The fact of the presence of a thrombus in all cases is strongly insisted upon, although of much less size when antiseptic precautions were used, its period of greatest usefulness being at the time when the walls of the vessel are retracting, preventing, on the one hand, the escape of blood; and, on the other, serving as a culture medium for the new cells.

The manner, too, in which the vessel opens again, and the new tissue penetrates to form the lasting cicatrix, is very well illustrated and made prominent. The idea that the endothelial cells take any prominent part in the process is refuted by his experiments, there having only been observed an occasional thickening of the inner coat, which might aid in fixing the thrombus, but nothing more.

Only an extended extract would do justice to his work, which he has carefully summarized at the end, and which should be seen in the original. An extended bibliography and a capital index complete the book. The illustrations, which are entirely from his own specimens, are very numerous, and show clearly the points intended.

We look upon this as a distinct contribution to the science of medicine, on a side which the calls of everyday practice leave untouched for so many. It only remains to add that the publishers have in their liberality made the volume fittingly attractive.

Massage as a Mode of Treatment. By WILLIAM MURRELL, M.D., F.R.C.P., Lecturer on Pharmacology and Therapeutics at the Westminster Hospital; Examiner in Materia Medica in the University of Edinburgh, and to the Royal College of Physicians of London. Philadelphia: P. Blakiston, Son & Co. 1886. pp. vi. 78.

The reason given by the author for the preparation of this work is that he has received many letters from physicians in England, asking for information about the therapeutical value of massage, in consequence of his having delivered a lecture on the subject in December, 1885. From this it must appear that interest in massage in England is just ten years behind that of Germany, for in 1875 it was an everyday question amongst many physicians in Germany as to what massage meant. Long before that time massage was well known in America. After a short introductory chapter comes a brief outline of the history of massage, which, with much of the rest of the book many of our readers will recognize as having been already more fully published in the United States, in a recent work on massage.

The experiments of Von Mesengeil, showing the increased power of absorption of foreign substances from the joints of rabbits under the stimulus of massage, Dr. Murrell thinks, has placed the whole subject on a firm basis. In 1878, it was thought by some that Weir Mitchell's thermometrical observations placed massage on an exact scientific basis. But more

enlarged views of the subject must prevail. In the chapter on the method of performing massage, appropriate excuse for brevity and omissions is made in the statement of the author that it is almost as impossible to teach the art of massage by written or verbal description as it would be to make a piano-forte player without recourse to the instrument. It is a puzzle to us why he and many others state that in doing the deep manipulation the hands must move simultaneously and in opposite directions. This produces a sensation of tearing of the skin; whereas when moved *alternately* in the same or opposite directions the effect is soothing. And yet Dr. Murrell wisely insists on massage being skilfully done by people of education and refinement, and instances the fact that Dr. Mezgr and Professor Von Mesengeil are their own operators.

He asked a medical friend if he used massage in his practice. The reply was "Oh yes, a good deal, my butler does it." After that he should not be surprised to hear that the electrical treatment was conducted by the footman and that the kitchen maid undertook the obstetrical cases.

The author advocates short séances of eight or ten minutes, repeated three or four times a day, and whenever it is possible the patient should go to the house of the operator so that the latter may not be fatigued by travel.

In the chapter on the physiological action of massage the principal item with which we were not already familiar is that of Gapadze's experiments on four healthy men, showing that the temperature in the axilla fell for about half an hour after each massage, but not more than half a degree. After this it rose steadily, and an hour later it was generally a degree higher than at the beginning of the massage. Here he also speaks of the efficacy of massage in hastening the union of fractures as a fact now well established, but does not tell us when or how it should be employed, whether early, to hasten absorption of an unusually large effusion, or late, to stimulate delayed union, or whether all fractures would unite more speedily if massage could be applied without disturbing the fragments.

In place of the somewhat sentimental description of the symptoms of infantile paralysis it would have been better if the author had occupied the space by more clearly defining the indications that would lead us to hope for improvement from massage in such cases. His theory of its action (given in another chapter and somewhat out of place) is that the nutrition of the parts is maintained until new cells in the spinal cord take on the functions of those which have been destroyed. He has had many of these cases under observation "and in every instance in which the treatment was carried out actively and systematically the best possible results were obtained." He regards electricity as a useful adjunct. In recent cases the prognosis is given as good, but in old cases a cautious opinion is best. To our way of thinking, the extent and severity of the central disturbance has more to do with the prognosis than the length of time it has existed. Dr. Murrell says nothing about remedial movements or medical gymnastics, which are of even greater importance than either massage or electricity where a little healthy muscular tissue and slight power of motion still remain. He also states that massage is of great benefit in locomotor ataxia, pseudo-hypertrophic paralysis, facial paralysis, wasting palsy, and allied conditions. He finds massage of great value to reduce corpulency, especially in ladies about the age of thirty-five who have led a sedentary life. But we are not told what sort of adipose tissue is susceptible of decrease, whether hard or soft. We suspect it is only the latter.

Inasmuch, as the author respects the limited space he has allowed himself, we cannot understand why he should have wasted some of it by sensational quotations of faith cures, and the cure of a startling case about which it was not very clear what the matter was. For vague uneasy pains sometimes called rheumatic, neuralgic or growing pains, Dr. Murrell finds that massage affords prompt relief. In *neurasthenia spinalis* he has found massage to be of the greatest use, and he knows of no class of cases in which massage does so much good as in spinal irritation. A careful reader, however, will observe that in quoting some causes of neurasthenia from a recent American work on massage, the quotation is too limited and does not, for this reason, do justice to the original.

For some years there has been a prevalent opinion amongst physicians in London that massage should not be used in cases suffering from heart disease. We have employed massage in almost every form of disease of the heart with, at least, temporary relief even up to the day of the patient's death. It is a satisfaction to have this experience in part confirmed by Dr. Murrell who narrates a case with a loud systolic murmur, a weak and irritable heart that had massage four times weekly for six weeks and improved from the first, becoming better than for many months.

There is also a chapter on joint affections in which the author tells us that most of the cases that he saw treated by Von Mesengeil on the Continent, would have been considered incurable in England. Mention is here made of that curious old book which describes the system and results of friction as used by Professor Grosvenor, of Oxford, a century ago, and regret is expressed that there is no copy of it in any of the medical libraries of London. Dr. Murrell recommends it as well worth reading. But how can it be extensively read if it is so scarce? We are the fortunate possessors of a copy, and all there is of value in it will be found in Graham, on Massage.

The remaining points worthy of notice are that the author has found massage of undoubted value to prepare the system for the assimilation of iron in anæmia, to improve the strength and nutrition in cases of debility after the active symptoms of syphilis have subsided, and to maintain the temperature in cases of acute chloral poisoning.

The chief value of the work is a vigorous confirmation of what has been previously said on the subject of massage, and this coming from a man of such wide reputation will help to raise it in the esteem of the profession. The book is easy and pleasant reading, and is to be heartily commended to those who have not time to read more fully on the subject. But for those who do, it would have been well if the author had referred others more directly to his own sources of information. The index is too copious and has references without meaning, as will be seen by looking for information about lateral curvature. Nothing is said about the effects of massage on this.

Dr. Benjamin Lee's "Tracts on Massage," are much more carefully prepared and will prove more satisfactory to those who desire accurate information.

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THE TREATMENT OF FRACTURES OF THE LOWER END OF THE HUMERUS.

FRACTURES about the elbow-joint will probably always be a source of anxiety to the surgeon. Difficulty of diagnosis, difficulty of retaining fragments in place, the frequency with which the joint is involved, make the results often fall short of perfection and bring deformity to the patient, and chagrin to the attendant surgeon. Fractures into any joint are specially liable to impair the functions of that joint; fractures into the elbow-joint are no exceptions to the rule, and an unfortunate result does not render it necessary to incriminate the method of treatment. A certain number of cases must inevitably be followed by impaired motion.

To those who were fortunate enough to listen to or even read the spirited lecture of Prof. Henry J. Bigelow on "Fractures of the Elbow-joint," such an article as the one we publish to-day seems like heresy. Fractures about the elbow are usually treated in Boston in accordance with the teachings of that lecture which are summed up in the following rule:

"Ascertain if the olecranon is broken. . . . In all other injuries of the elbow-joint whether you are able to make an exact diagnosis or are wholly unable to do so on account of the swelling, *treat them as though the forearm had been dislocated backwards, and secure the arm at about right angles to an inside angular splint.*"

This splint, which might be described as an anterior right-angled splint quite as justly as an inside angular splint — the *inside* referring to the angle and not to the side of the arm — should be solid, or at least firm, and not with a loose hinge-joint at the angle that allows play in all directions and forbids any idea of fixation.

"The character of the injury is determined as far as may be without unnecessary harm from manipulation of the parts, and the elbow being placed at right angles, the wrist is drawn forward while the humerus is pushed backward at the elbow, precisely as if a backward dislocation was being reduced. In this position it is forcibly maintained while the fragments are adjusted as far as may be and an internal angular splint padded by a folded towel is applied by an assistant."

To this it might perhaps be added that a sling needs to be carefully adjusted so as to keep the forearm so raised as to relieve the splint and bandages of the weight and leverage of the forearm and hand. Careful manipulation of the injured elbow, and the addition of any pads and additional splints that each case may call for, may add greatly to the accuracy of adjustment, and assist in gaining results that will leave little to be desired; then a careful supervision to see that the position is maintained, and bandages do not slip, can never be omitted.

The published lecture [1] of the eminent professor to which we have referred, contains also a condemnation of the practice of passive motion as applied to the elbow-joint, which was characterized as productive of more harm than good.

In order to obtain the best possible result in any fracture, one must direct all his efforts to place the broken bones in their normal position and maintain them in such position until union has taken place, due regard being had to the integrity of the soft parts meanwhile. Pumping the joint in the immediate vicinity of the break is certain to interfere with the careful approximation of the fragments, either by direct action or by provoking contraction of some of the periarticular muscles, and is even more likely to impair the result than to improve it. Absolute immobility offers the surest means of obtaining early union with a minimum of callus, and the least inflammatory complication.

It seems worth while to quote in full the statement of Dr. Ingalls to which reference has been made in the article of Dr. J. S. Bigelow. Under the heading "Hospital Notes" occurs a short article "On the Treatment of Fractures of the Upper Extremities in Boston Hospitals. (Specially reported for the *Medical News*,") but the name of the reporter is not given. In that article occurs the following:

"Simple fractures of the lower third of the humerus are put up in an internal angular splint; and this splint is also used for all fractures about the elbow, whether above, through or below the joint, except those of the olecranon.

"Dr. Ingalls, of the Boston City Hospital, is of the opinion that in many cases of fracture of the humerus near the elbow-joint, the best treatment is to make traction with the arm extended instead of being flexed around an internal angular splint; and he intends to treat these fractures in the above manner, and to pay particular attention to the use of passive motion as early as possible."

Certain exceptional cases are then mentioned in which the patients are confined to bed and extension applied. These latter cases are certainly very rare and include few cases besides those of such extensive injury that splints are for a time out of the question,

[1] Boston Medical and Surgical Journal, May 7, 1868.

and these are often fractures in the shaft of the humerus, above the region of the joint.

In quoting authorities, Dr. J. S. Bigelow does not give a passage from Hamilton which tells most strongly in favor of the position he advocates, though expressing a different opinion as to the muscular action: "Although the flexed position must usually be regarded as the best in these fractures (fracture at the base of the condyles, complicated with fracture between the condyles, extending into the joint), for the reason that it most completely relaxes the biceps, brachialis anticus and the flexors of the forearm, and because if anchylosis ensues, the flexed position gives the most useful arm, yet, I think it might be proper to try what better can be accomplished by permanent extension with the forearm straightened upon the arm," etc.

No one can read for the first time the articles which Dr. Allis [2] has published upon the subject of fractures of the humerus without treating fractures in the vicinity of the elbow the better for it, but the straight position is not the inevitable and only refuge from the evils to which he draws attention. And one cannot fail to be struck by such a remark as that of George R. Fowler [3] in a discussion on a paper of Dr. Allis's; "The only case in which there was any considerable loss of movement of the joint was one which I saw in consultation, and advised its treatment in the nearly straight position."

But the final and conclusive argument is the greater utility of an arm anchylosed at a right angle than that of one immovably straight. Any one who has been enabled to watch an otherwise healthy boy with an arm fixed in a straight position, will be very careful how he exposes one of his own patients to the risk of such a misfortune. The straight position cannot overcome the dangers inherent in a fracture into the joint, and the surgeon who adopts that position would certainly abandon all its fancied advantages if an anchylosis should once unfortunately occur in such practice.

CEREBRAL LOCALIZATIONS.

At the meeting of the Imperial Royal Society of Physicians held in Vienna, November 19th, Exner made an address on cerebral localizations, in which he summed up the present status of physiological opinion on the subject, reviewing the published declarations of the principal authorities, and comparing them with his own views.

Taking for his point of departure the late discussion at the Assembly of German Physicians and Naturalists at Berlin — a discussion rendered memorable by the participation of leading physiologists who have made a special study of cerebral localizations — and after a rapid review of the views of Munk, Ferrier, Hitzig and Fritsch, Luciani and Sepilli, Charcot and Pitres, Exner remarked that, according to his own scheme, the centres of the different functions are not isolated, but inter-connected, each with each in the cerebrum.

Paneth has clearly shown that Hitzig's centres (which differ but little from Ferrier's) represent only the *maximum* of excitability of the sense or motor function therein localized. Hitzig has, moreover, adopted this statement, as harmonizing with the facts which he has witnessed. Charcot and Pitres, Luciani and Sepilli, oppose Exner's views, while admitting the inter-connections of the various centres. After this general survey, Exner takes up the consideration of the different centres.

As regards the motor area in the dog, Exner asks if this area be really circumscribed, or if it extends beyond the limits indicated by Munk. Munk presented to the Assembly of Naturalists a dog which he had rendered blind by removing the occipital lobes; but, as this animal could not descend a flight of stairs, Goltz affirmed that there must be a lesion of motility also, for a dog, simply deprived of its visual lobes, ought to be quite able to descend stairs. Munk, in commenting on this objection, affirms that a dog from which a part of the cerebrum has been removed must comport itself differently in its movements from a dog whose cerebrum is intact, meaning by this that the motor functions of the dog are impaired; hence the occipital lobe not only contains the visual centre, but the motor area extends also into this lobe. Goltz has declared that the results which he has obtained are not in contradiction with those of Exner and Hitzig. Fritsch, moreover, led by anatomical considerations, has pronounced against the exact limitation of localization, so that a majority of physiologists are agreed as to what concerns the motor sphere. Among the sensorial zones, the visual centre is the best known and the most important. According to Munk, the visual zone is very limited; Goltz protests against any such limitation, and Hitzig, Luciani, and Sepilli are in agreement with him. Exner and Paneth have determined lesions of the sigmoid gyrus in ten dogs. Nine of them had visual troubles, but it is possible that these were due rather to a "lesion of attention" than of true vision.

Is it possible to render mammals blind by extirpation of the occipital lobes or of the entire cerebral cortex? Frogs preserve their visual faculty intact after extirpation of the whole of the cerebral cortex, and it is the same with birds. Nevertheless, Munk pretends that pigeons become blind after extirpation of the entire cortex. Gudden has removed, in hares, the greater part of the hemispheres, and these animals do not become blind.

Munk has demonstrated that a dog may be rendered blind by extirpation of the occipital lobes. Goltz presented to the Assembly of Naturalists the cerebra of dogs, which, during life, saw very distinctly. These cerebra differed in nothing from those shown by Munk. It is then very probable that the extirpation

[2] Allis, Oscar H. Deformity from Fractures of the Humerus. Annals of the Anat. and Surg. Society. 1880. p. 289.
[3] George R. Fowler, Annals of the Anat. and Surgical Society, Brooklyn, N. Y. 1880. p. 309.

of the occipital lobes does not always produce blindness. This view seems paradoxical, and in contradiction, at first sight, with the law of causality, but it must be remarked that the brain is an organ whose functions are still largely in the domain of hypothesis; and variations of greater or less importance in both structure and function have been proved. Thus it is that aphasia is determined sometimes by lesion of the left inferior frontal lobe, and sometimes by lesion of the right inferior frontal lobe; there exists also cases in which decussation of the pyramidal columns has not been found. Munk's dogs were blind, but in these cases Munk himself has acknowledged that there was atrophy of the optic nerves.

Must we deny the law of Gudden, which says that lesions of the cortex never determine lesions of the peripheral nerves, or must we admit that Munk removed something besides the cortex?

The animals observed by Munk also presented functional lesions of certain parts of the retina. Here, again, the question comes up: was not the visual trouble of these dogs due rather to lesion of the attention than of the faculty of vision? Munk's scheme, according to which the cerebral cortex of one side is connected with half the visual field of both sides, has been combated by Luciani, who has obtained the same visual troubles, whatever part of the cortex was extirpated.

Exner finally makes allusion to the little knowledge which we possess respecting the cerebral localization of the other senses; he remarks that almost all the physiologists who have wrought at this question admit that there do not exist strict and well-defined localizations, but that the different centres are inter-connected, each at the same time presenting a region more especially rich in nerves and nerve-fibres pertaining to a certain function.

The report of the Physiological Section of the German Naturalists and Physicians at the meeting in Berlin last September (*Deutsch. Med. Wochr.*, No. 40, 1886), shows not only great differences of opinion in regard to cerebral localizations, but of interpretation of the results of experiments upon animals. In fact, some of the meetings were quite stormy, and it was apparent that anger may possess the minds of physiologists as of celestials.

DIET IN FEVERS.

AT the meeting of the Society of Therapeutics, Paris, October 13th, 1886, Dujardin-Beaumetz read a communication on "Diet in Febrile Maladies" which was of a practical nature, and elicited considerable comment.[1] He recalled to the minds of those present that after the memorable discussion of this subject at the Society of the Hospitals thirty years ago (in 1857) the rigorous diet heretofore imposed upon fever patients was abandoned, and a more generous alimentation adopted, especially in typhoid fever. Trousseau, Monneret, and Hérard were prominent advocates of this new dietetic treatment of fevers. On what basis may a rational alimentary regimen in febrile maladies be established? If we take into account the average waste, that is, the daily loss of weight, the need of reparative alimentation is apparent. According to Layton's figures, a typhoid fever patient loses weight at the rate of two hundred and thirty-nine grammes a day, though the waste is often greater than this. But however abundantly nutriment may be provided, it is not certain that much will be assimilated. In typhoid fever (which may be taken as the type of fevers), the lymphatic network of the intestines is the seat of an inflammation which opposes absorption. The chyle, (that is to say, the fatty substances and the peptonized albuminoid matters), will not then find its way into the circulation by the lacteals and thoracic duct, and it is only by the radiates of the portal vein that aqueous and saline substances can get into the system.

Moreover, the labors of Bouchard, of Lépine, of A. Robin, have shown that in the febrile process there is an accumulation in the economy of the products of organic disintegration, and that it is desirable to facilitate the excretion of these toxic products.

From all this it results, according to this view, that in febrile states, and in particular, in typhoid fever, the digestive tube is not in a fit condition for the absorption of albuminoids and fats, and the economy is poisoned by the débris of organic disintegration. Dietetics have but a limited role in these cases, since only liquid and saline substances can penetrate the economy at the same time that the patient's own fat and muscular tissue is consumed by the febrile process.

As to the kinds of food most likely to be appropriated, it may be affirmed that the broth and milk which we are in the habit of administering to our typhoid patients enable us to introduce on the one hand a great quantity of water, and on the other certain saline substances. In the typhoid patient there is a veritable *inanition* of mineral matters, resulting from the daily losses in potassium, in sulphuric acid, in phosphoric acid, and chloride of sodium, products of disassimilation which pass off by the urine, and which attain the figure of three to four grammes of chloride of sodium, one and one-half to two grammes of phosphoric acid, 2.967 grammes of sulphuric acid, and 1.730 grammes of potassa. Broth seems best to fulfil the desideratum, for it contains little besides water and salts.

Is it the same with milk? This question may to a certain extent be answered in the affirmative. By the water and saline ingredients it contains (and which latter resemble those of serum), milk very well responds to the indication for a liquid and saline nutriment in febrile diseases. But milk contains albuminoids and fats besides. What part do these play? Do they act as food, or are they rejected, without being absorbed. We are entirely ignorant, and careful experiments, made by daily weighing typhoid pa-

[1] Bull. et Mém. de la Soc. de Thér., October 20, 1886.

tients fed exclusively with beef tea and broth, and such as are fed exclusively on milk, might, perhaps aid in throwing some light on this question. Such experiments Beaumetz is instituting in the Cochin hospital, while inclining to the opinion that milk in typhoid fever has a nutrient value only by reason of the salts and water which it contains. As for wine, he believes that it has a general tonic effect, besides being a waste-restrainer.

In the discussion which followed the reading of the paper of which the above is an abstract, Blachez remarks that, if it were well proved that fever patients do not assimilate albuminoids, it would be useless to give them a nutriment so rich in albuminoids as milk.

Catillon thought that alimentation by broth was an illusion. Corville and Bochefontaine in their experiments on dogs have shown that these animals when fed only on broth waste quite as fast as those to which nothing but water is given. As for the organic combustions, they are not always in relation with the excretion of urea, which may augment while the temperature remains normal.

Ernest Labbée remarked that it was a custom of Monneret to give his fever patients six quarts of liquid nourishment a day. This he regarded as excessive alimentation, forcing into patients more liquid than they like to take, and imposing on the kidneys too heavy a task of elimination, whence renal congestion and albuminuria are likely to result. He thought that four quarts of liquid a day should suffice.

Cadet de Gassicourt was of opinion that the scales would enlighten us as to the value of milk in the diet of typhoid fever patients; by daily weighing our patients we should find whether they lose as much weight when fed on milk as on broth, or whether there be a difference in favor of milk.

Bucquoi regarded it as a matter of indifference whether milk or broth be the diet of typhoid patients, for during the active stages of the fever (periode d'état), these patients cannot assimilate the nutritive elements of either the one or the other. Perhaps even the medicines we give are no better absorbed.

Crequy observed that if milk were not absorbed in typhoid fever, the casein would appear in the stools in the form of curds, which in his experience was not often the case.

Ernest Labbée replied to the remark of Bucquoi concerning medicaments, that we have proof that certain medicines, as quinine and antipyrine are absorbed, for we note their physiological effects; quinine, moreover, has been found in the urine.

Campardon observed with reference to the absorption of salines, that it is a fortunate circumstance that these substances are so readily assimilable they promote diuresis, and thus purify the organism by more rapid elimination of effete products. Bucquoi, thought that to be consistent, Dujardin-Beaumetz ought to replace milk by whey in the alimentation of his typhoid patients.

Cadet de Gassicourt closed the debate by saying that the suggestive communication of Dujardin-Beaumetz brings before us questions of very great importance. We have now to ask ourselves if all that we can do is simply to subject our fever patients to an aqueous, saline diet (as seems probable from the new physiological considerations which have been advanced), or whether we can sustain their forces and check too rapid waste by a suitable strengthening alimentation. The question cannot be solved by discussion or speculation, but by direct and accurate experimentation.

INCREASE OF INSANE AND PAUPERS IN NEW YORK.

A special meeting of the State Board of Charities was held at Albany, December 9 and 10, for the purpose of considering the annual report. The report shows a slight increase in the pauper and reformatory classes, and a large increase in the number of the insane, the various asylums of the State having 13,533 insane persons in their care on October 1st, 1886, as against 12,707 at the same date in 1885. These institutions are generally crowded, and there is urgent need of increased accommodations for this class.

At the same time, the report points out the importance of more stringent measures for the prevention of the shipment of the insane or otherwise infirm paupers into New York from other States and countries.

One of the most important questions to which the Board has directed its attention during the year is the desirability of a more practical industrial training of the youthful wards of the State, especially girls and young women; and at the recent meeting, measures were adopted for bringing the matter prominently to the notice of the managers of orphan asylums and all other public institutions having charge of female children.

MEDICAL NOTES.

— It appears that her gracious majesty, Victoria, was nursed at the breast of her mother, the Duchess of Kent, and that she herself performed the same maternal office for each of her nine children. But then, of course, the outside duties and engagements of a queen are much less onerous than those which oblige so many women of society to delegate such homely duties to a menial.

— The *Archives of Pediatrics* (July, 1886), contains a good word for salicylate of sodium in infantile diarrhœa. A prominent factor in all cases of infantile diarrhœa, if indeed not the chief factor, is that fermentation has taken place in the course of the alimentary tract, and the motions are constantly therefore acid, extremely offensive, and full of undigested milk. To prevent this fermentation should be the first aim of treatment. With this object, Dr. Shank recommends salicylate of sodium as being at once an antacid and a powerful antiseptic, and, what is of great

moment, a medicine easily administered to a child. He gives one grain every three hours to a child a year old. If there is much vomiting he adds a fourth of a grain of calomel to each dose, and small quantities of opium if there is much pain.

— The Chinese have a rather radical cure for cholera. A Shanghai paper says that on July 22d, a Chinaman employed on one of the steamers was taken ill, apparently with cholera. The following is the course which was adopted, according to the paper from which we quote: "His friends immediately sent for a native doctor. This individual had with him a box containing some long needles, and these he used on the patient. A needle was driven some distance into the man's head, near each temple, and again behind his ears. In each case bleeding followed. Needles were also driven into the lips, both sides of the chest, both sides of the stomach, and also into the pit of it. The doctor then scraped the skin of the man's throat till it looked like the neck of a turkey. This violent treatment had the desired effect, and in a few hours afterwards the man was quite well, and eating his midday meat with evident relish."

In a recent number of the *Berliner Klin. Wochenschrift*, a remarkable case is recorded by Dr. Wolf of Goritz, of poisoning by the medicinal administration of iodide of potassium; the amount of the drug taken was no more than four tablespoonfuls of a three per cent. solution in about thirty-six hours, and the purity of the drug was shown by chemical analysis. The patient was suffering at the time from subacute kidney disease of about three months' standing, and cardiac hypertrophy, which facts we must bear in mind in estimating the idiosyncrasy. After the administration of four tablespoonfuls of the above-named solution, the face became swollen and covered with pustules, papules, and bullæ, and twenty-fours after the mucous membrane of the mouth, pharynx, and alimentary canal became attacked in a similar manner. On the cessation of the drug no amelioration ensued, and in eight days the patient sank into a state of collapse and died. No necropsy was made. A similar case was recorded by Morrow, in which the administration of the drug to a person suffering from renal and cardiac disease caused an eruption resembling pemphigus, with similar symptoms and result.

NEW YORK.

— At the annual meeting of the New York State Veterinary Society, which was held at the American Veterinary College on December 15th, the following officers were elected: President, Dr. W. H. Pendry; First Vice-President, Dr. Theodore Birdsall; Second Vice-President, Dr. George Brown; Secretary and Treasurer, Dr. W. E. Cuff.

— The annual meeting of the Society of Medical Jurisprudence and State Medicine was held December 9th, when the following officers were elected: President, Amos G. Hull, Esq., Vice-President; Dr. E. A. Harwood; Secretary, Dr. E. C. Spitkza; Assistant-Secretary, Dr. J. F. Chauveau; Treasurer, Dr. R. C. M. Page. Mr. W. H. H. Russell presented the report of a committee which had been appointed to devise means to aid the Health Department in suppressing the manufacture and sale of unwholesome or adulterated food. The report urged the appointment of four additional inspectors of milk, nine of meat, six of fruit, and one of fish; and the recommendation was opposed by Drs. Leale and Spitzka, who contended that the Board of Health already had sufficient inspectors to do the work required of them.

— The Governor has appointed Mr. Thomas Newbold, of Poughkeepsie, recently a State Senator, and Dr. Maurice Perkins, of Schnectady, Professor of Chemistry in Union College, members of the State Board of Health, to fill the vacancies made by the retirement of Dr. E. M. Moore, and the death of the Hon. Erastus Brooks.

At a meeting of the board of Health held December 16th, a reply was formulated to the criticisms of the Commissioners of Accounts, and sent to the Board of Estimate, in the course of which they assert that the expenditures for salaries were incorrectly stated by the Commissioners; that the actual amount of the unexpended balance of the appropriation for the year 1886 may be regarded as caused by the small amount employed for disinfection last summer; that the standard of qualifications of additional sanitary inspection has not been lowered, and that the statement of the Commissioners that hardly fifty per cent. of the Board's primary orders are complied with, is disproved by the records, which show that between July 1, 1885, and July 1, 1886, of 19,490 such orders issued, 18,732 were complied with.

— On December 13th, when the Board of Estimate and Apportionment were engaged in finally settling the amount of the appropriation for the Health Department for the coming year, a communication was received from the Commissioners of Accounts, in which the management of the latter was severely criticized. A portion of it is as follows: — "The department has undoubtedly many serious obstacles in its path, not the least of which perhaps are its defective laws, and yet we cannot resist the conviction that notwithstanding the inperfection of the law, it falls far short of what it might be under a capable, vigorous and experienced head. Its system of business is too circulatory and expensive. There is too much formality and too little out-door work of an aggressive and effective kind; the lax policy which obtains in regard to the enforcement of original orders tends to bring the authority of the department into contempt. Hardly fifty per cent. of its primary orders are carried out. Inspections and reinspections of a single case occur until they are numbered by scores and entries thereof on the book by hundreds. The policy now pursued is the reverse of that which obtained in the early history of the department."

PHILADELPHIA.

— The College of Physicians will celebrate the centennial anniversary of its organization on Monday, January 3d. The President of the College, Dr. S. Weir Mitchell, will deliver a commemorative address at Association Hall, Monday evening, which will be followed by a reception. Tuesday evening, the President and Fellows will give a dinner at the Assembly Rooms of the Union League Club. It is understood that many of the vacancies in the associate membership will be filled by the election of distinguished members of the profession in other parts of the country.

Correspondence.

MORE SEVERED DIGITS.

FORT TOTTEN, DAKOTA, Dec. 16, 1886.

MR. EDITOR, — I have just read Dr. I. F. Galloupe's letter in your issue of November 25th, in regard to severed digits, and send you a report of the following case, which occurred in my practice.

Private Charles Tomlison, Company "F," 17th Infantry, reported to me on the 2d of October, 1885, with about half an inch of the tip severed from the ring finger of his left hand. He stated that he had just met with the accident while cutting wood at his company quarters, about three hundred yards away. As he did not bring the severed piece of finger with him, I sent some one to look for it at the wood-pile, and after, perhaps, twenty minutes, it was found and brought to me. I carefully washed it in tepid water, replaced it on the stump, secured it by means of strips of plaster and hermetically sealed the dressing with collodion.

No other dressing was used, and in a little more than a month the piece had freely reunited. Ultimately the sensation was almost entirely restored. I forgot to mention that the cut was a clean one. Respectfully yours;

A. A. DELOFFRE, *Asst. Surg. U. S. A.*

COMMITTEE FOR COLLECTIVE INVESTIGATION, INTERNATIONAL CONGRESS.

110 W. 34TH ST., NEW YORK, Dec. 19th, 1886.

MR. EDITOR,— In the session of the International Medical Congress, of Copenhagen, I was appointed the American member of the Committee for Collective Investigation, and permitted to select a colleague in the United States. Thus the pamphlets and circulars prepared by, or with the authority of, the General Committee in London, were distributed under the names of N. S. Davis, and the undersigned. They were made returnable to my address, on January 1st, 1887.

As I have resigned my position on the above committee, I require the permission and privilege of notifying, through your Journal, the holders of the above pamphlets, that they ought to be sent to N. S. Davis, M.D., 85 Randolph Street, Chicago, Ill., instead of the undersigned.

Very respectfully, A. JACOBI, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 11, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Measles.	Diph. & Croup.	Typhoid Fever.
New York	1,439,039	835	333	26.16	13.08	7.92	10.44	1.68
Philadelphia	971,363	412	145	15.60	6.32	—	8.16	3.36
Brooklyn	690,000	—	—	—	—	—	—	—
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	229	78	14.08	19.36	3.08	6.16	2.64
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	166	63	13.20	12.60	—	6.60	2.40
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans	238,000	—	—	—	—	—	—	—
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	89	19	10.08	13.44	—	3.36	5.60
Pittsburgh	190,000	68	29	23.52	8.82	8 82	4.41	5.88
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	22	9	22.75	4.55	13.65	—	—
Charleston	60,145	49	14	6.12	10 20	—	4.08	—
Worcester	68,383	20	4	5.00	15.00	—	—	—
Lowell	64,051	30	12	20.00	10 00	—	3.33	6.66
Cambridge	59,600	35	17	20.00	16.30	—	11.16	2.86
Fall River	56,863	16	6	18.75	6.25	—	—	6.25
Lynn	45,861	14	6	14.28	—	—	14.28	—
Lawrence	38,825	8	—	—	25.00	—	—	—
Springfield	37,577	14	3	7.28	7.28	—	7.28	—
New Bedford	33,393	12	3	16.66	25.00	—	8.33	—
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	13	2	7.69	15.38	—	—	7.69
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	—	—	—	—	—	—	—
Taunton	23,674	6	2	—	—	—	—	—
Haverhill	21,795	—	—	—	—	—	—	—
Gloucester	21,713	4	1	50.00	16.66	—	50.00	—
Brockton	20,783	—	—	—	—	—	—	—
Newton	19,759	6	1	—	—	—	—	—
Malden	16,407	—	—	—	—	—	—	—
Fitchburg	15,375	4	2	—	—	—	—	—
Waltham	14,609	1	0	—	—	—	—	—
Newburyport	13,716	2	1	—	—	—	—	—
Northampton	12,896	—	—	—	—	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,055: under five years of age 760: principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 395, lung diseases 316, consumption 262, diphtheria and croup 166, measles 82, typhoid fever 52, diarrhœal diseases 35, malarial fever 23, scarlet fever 11, whooping-cough 10, cerebro-spinal meningitis seven, erysipelas seven, puerperal fever two From diarrhœal diseases, New York 18, Philadelphia nine, Boston, District of Columbia, and Fall River two each. Nashville and New Bedford one each. From malarial fevers, New York 15, Baltimore four, Philadelphia three, Charleston one. From scarlet fever, New York six, Philadelphia two, Baltimore, Pittsburgh and Worcester one each. From whooping-cough, New York and Lowell three each, Philadelphia two, Boston and Baltimore one each. From cerebro-spinal meningitis, New York five, Philadelphia and Baltimore one each. From erysipelas, New York four, Boston, Pittsburgh and Nashville one each. From puerperal fever, Boston and Pittsburgh one each.

In the 19 cities and greater towns of Massachusetts, with a population of 967,534 (population of the State 1,941,465), the total death-rate for the week was 23.06 against 18.14 and 16.64 for the two preceding weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending November 27th the death-rate was 20.2. Deaths reported 3,529: infants under one year of age 825; acute diseases of the respiratory organs (London) 413, measles 144, scarlet fever 75, whooping-cough 54, fever 55, diphtheria 37, diarrhœa 35.

The death-rates ranged from 13.4 in Brighton to 29.5 in Norwich; Birmingham 16.6; Bolton 17.8; Bradford 19.4; Hull 20.2; Leeds 23.1; Leicester 20 9; Liverpool 21.8; London 19.4; Manchester 22.0; Nottingham 18.2; Sheffield 21.5; Sunderland 15.6.

In Edinburgh 18.9; Glasgow 25.4; Dublin 25.3.

For the week ending November 27th, in the Swiss towns, there were 32 deaths from consumption, lung diseases 18, diarrhœal diseases 18, measles four, diphtheria and croup four, whooping-cough two, erysipelas one.

The death-rates were: at Zurich 17.2; Geneva 12.1; Basle 16.3; Berne 9.6.

The meteorological record for the week ending December 11, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Dec. 11, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration: Hrs. & Min.	Amount in Inches.
Sunday,... 5	30.441	14.0	16.0	7.0	64.0	87.0	84.0	78.0	N.W.	N.	N.E.	12	16	20	O.	H.S.	L.S.	—	—
Monday,.. 6	30.187	25.0	31.0	14 0	77.0	52.0	69.0	66.0	N.	N.	N.E.	20	16	24	O.	O.	O.	—	—
Tuesday,.. 7	30.032	22.0	30.0	17.0	86.0	93 0	87.0	89.0	N.E.	N.E.	N.E.	28	29	21	L.S.	L.S.	L.S.	—	—
Wednes,.. 8	30 131	29.0	34.0	20.0	73.0	61.0	60.0	65.0	W.	W.	W.	13	15	10	C.	C.	O.	—	—
Thursday, 9	30.359	35.0	42.0	27.0	69.0	54.0	72.0	64.0	W.	N.W.	N.	9	8	1	F.	C.	C.	—	—
Friday, ...10	30.298	35.0	44.0	21.0	92.0	48.0	53.0	64.0	N.W.	W.	W.	4	13	22	F.	C.	C.	—	—
Saturday, .11	30.180	42.0	52.0	27.0	49.0	53.0	57.0	60.0	W.	W.	N.W.	14	13	7	C.	C.	C.	.36½	.88
Mean, the Week.	30.272	29.0	35.0	19.0				69.0											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 11, 1886, TO DECEMBER 17, 1886.

WILLIAMS, JNO. W., major and surgeon. Ordered for duty at Jackson Barracks, La. S. O. 205, Division of the Atlantic, December 14, 1886.

POPE, B. F., major and surgeon. Relieved from duty in the office of the Surgeon General of the army, and will report in person to the president of the Army Medical Examining Board in New York City, for duty as member and recorder of the Board. S. O. 285, A. G. O., December 9, 1886.

POPE, BENJ. F., major and surgeon So much of S. O. 285, A. G. O., December 9, 1886, as directs him to report in person to the president of the Army Medical Examining Board, New York City, for duty as member and recorder of the Board, is revoked. S. O. 287, A. G. O., December 11, 1886.

CORSON, JOS. K., captain and assistant surgeon. Leave of absence extended seven days. S. O. 288, A. G. O., December 13, 1886.

BARROWS, CHARLES C., first lieutenant and assistant surgeon. Granted leave of absence for two months, to take effect when his services can be spared by his post commander. S. O. 285, A. G. O., December 9, 1886.

WILSON, GEORGE F., first lieutenant and assistant surgeon. Granted leave of absence for one month, with permission to apply to headquarters, Division of the Missouri, for an extension of twenty days, to take effect about December 15, 1886. S. O. 125, Department of Dakota, December 1, 1886.

BALL, R. R., first lieutenant and assistant surgeon. Ordered for duty at Fort Riley, Kan. S. O. 144, Department of Missouri, December 13, 1886.

SOCIETY NOTICE.

NORFOLK DISTRICT MEDICAL SOCIETY. — A meeting for Scientific Improvement will be held at the hall of the Roxbury City Guard, 67 Warren Street, Roxbury, December 28, at 7.45, P.M. Communications: I. "Insomnia," Samuel G. Webber, M.D. The discussion will be opened by Albert B. Robinson, M.D. II. "Convulsions of Children," Herbert W. White, M.D. The discussion will be opened by Orville F. Rogers, M.D., and Edward T. Williams, M.D. III. "Exhibition of a Human Fœtus of Three Months," Allen Burdick, M.D. IV. "Exhibition of a Human Fœtus of Two Weeks," Jas. C. D. Figeon, M.D.

S. ALLEN POTTER, M.D., *Secretary*.

APPOINTMENT.

Edward Reynolds, M.D., has been appointed assistant in Obstetrics in the Harvard Medical School.

BOOKS AND PAMPHLETS RECEIVED.

Sixth Annual Report of the State Board of Health of New York. Transmitted to the Legislature, March 19, 1886.

The Relative Influences of Maternal and Wet-Nursing on Mother and Child. By Joseph Edeil Winters, M.D., New York. New York, 1886. (Reprint.)

American Pharmaceutical Association. Preliminary Draft of a National Formulary. Reprinted from the Proceedings, Vol. 34, 1886.

An Epitome of the Newer Materia Medica. Standard Medicinal Products, and Fine Pharmaceutical Specialties. Introduced and manufactured by Parke, Davis & Co. Fourth edition. Revised and enlarged. 1886.

Massachusetts Institute of Technology. Twenty-Second Annual Catalogue of the Officers and Students, with a Statement of the Courses of Instruction and a List of the Alumni, 1886-87. Boston, 1886.

Conference of the American Shipping and Industrial League, held at Pensacola, Fla., November 10-12, 1886. Address on Relation of Quarantine to Shipping Interests. By Joseph Holt, M.D., President, Board of Health, State of Louisiana.

The Microbic Revolution in Surgery. An Address Introductory to the Fifth Session of Lectures, in the College of Physicians and Surgeons, of Chicago, delivered September 21st, 1886. By D. A. K. Steele, M.D., Professor of Orthopedic Surgery. Chicago, 1886. (Reprint).

The Science and Art of Obstetrics. By Theophilus Parvin, M.D., LL.D., Professor of Obstetrics and Diseases of Women and Children in Jefferson Medical College, etc. Illustrated with 214 wood-cuts and a colored plate. Philadelphia: Lea Brothers & Co. 1886.

Cataract Extraction without Iridectomy. Paper read before the San Francisco Medical Benevolent Society, November 22d, 1886. By Geo. H. Powers, A.M., M.D. (Harvard), Professor of Ophthalmology and Otology in the University of California. San Francisco, 1886.

Lecture.

THE BEST EQUIPMENT FOR MEDICAL STUDY.[1]

BY FREDERIC HENRY GERRISH, M.D.,
Professor of Anatomy in Bowdoin College.

One of the chief objects of the American Academy of Medicine is "to encourage young men to pursue regular courses of study in classical and scientific institutions before entering upon the study of medicine"; in other words, we declare that a college education is a particularly desirable prelude to the pursuit of medical science. But the training afforded in different institutions of this class is by no means the same. In one the classics are given especial prominence; in another, the sciences; in a third, mathematics or the modern languages; and, while we recognize the value of a knowledge of each of these studies, we cannot fail to see that the preparation of men coming from one college more adequately fits them to acquire a medical education than that possessed by the graduates of another. Thus, though we are glad to find the prospective medical student decorated with the baccalaureate degree from any respectable institution of learning, because such discipline as he presumably has had has qualified him in large measure to appreciate and profit by the teachings of the medical schools, we are usually justified in regretting some features of his course, and in wishing that other subjects had been taught in their stead.

The Academy, however, has never expressed itself definitely upon this very important topic. In few of the colleges of this country have courses been established with especial reference to the preparation of young men for medical study; and clearly, only a small proportion of those who are ambitious to qualify themselves in this regard can attend these institutions. But, in most other colleges, the elective system is so far established that the student has a generous range of studies from which to choose, and can nearly, if not completely, adapt his curriculum to any scheme which this society may recommend. An obstacle to the practical working of the plan is the fact that so many young men develop no definite preference for one profession or another until an advanced period in their college course. Some, however, and, in the aggregate, a very large number, determine early upon a medical career, and to them the advice of the Academy will be of great value.

It may be objected that it is unwise to attempt to bend a youth's thoughts in the direction of his life's work while yet he is in college; that he needs the training which shall discipline his mind in all its parts, so that it may be prepared to do any task that shall be set for it.

To this the answer is made that the plan proposed, while believed to be particularly adapted to the requirements of the future medical student, has in it nothing essentially professional, and is so proportioned that it provides for the symmetrical development of the intellectual and moral faculties. Every one of us would deplore a preparatory education which would make a man one-sided in any respect. We all recognize the necessity of the humanities as well as of the sciences; and no education can be regarded as liberal which omits either of them.

[1] Read before the American Academy of Medicine at its annual meeting, October 12, 1886.

The purposes of this paper are, first and principally, to indicate in what branches and by what methods the student will find at once the most wholesome training for his mind, and the furnishings which will best equip it for medical study; and, second, to propose a minimum standard, which every student should be obliged to attain before being admitted to the study of medicine.

THE PROPER STANDARD.

First, in order of importance, is a knowledge of the English language, a tongue so generous in its hospitality that it welcomes to its adoption any word, whatever its nationality, provided it gives a reasonable promise of usefulness; so flexible, that a writer who besprinkles his page with foreign expressions is immediately suspected of an insufficient acquaintance with his vernacular; so strong, that it seems destined to develop into the universal speech. Without a complete knowledge of it, the student cannot understand the text-books he reads, or the teachers to whom he listens; he is unable to communicate to others his own thoughts, and, as a practitioner, his observations, though possibly of value on account of his native aptitude of perception, will fail to receive the recognition they merit, from the slovenly, crude, and obscure manner in which they are presented. We too often see illustrations of this fact in our medical journals; and still more frequently we meet men of great original ability, whose keenness has detected some new peculiarity of a disease, or some curious and unrecorded action of a medicine, or whose ingenuity has devised an improvement in surgical therapeutics, who are restrained from publishing their discoveries by an overwhelming sense of inability to report them properly.

A schooling is radically defective which does not include a steady, persistent, long-continued drill in English; constant exercises in reading the best writers in prose and verse, for the sake of acquiring elevation of taste and purity of style; daily practice in definition and the use of synonyms, in order to enlarge the vocabulary and give precision to diction, and, consequently, accuracy to thought; and frequent tasks in composition, that facility in written expression may be gained, and the pen become a fleet and willing assistant, instead of the slow and reluctant slave, which it is to so large a number of physicians.

Immediately suggested by these rhetorical exercises, because inseparably associated with most of them, is the matter of penmanship. It is not necessary that a physician should perform like a professor of calligraphy; but he ought, at least, to write with absolute distinctness. A short time ago there appeared in a prominent medical weekly a paper on abdominal section, and in it occurred this remarkable statement: "In Battey's operation the brains are removed: in Tait's the brains and the tubes." Who can blame the compositor for a mistake in a report so badly penned that "ovaries" looked like "brains"; and who would waste sympathy on an author who took so little care to make his manuscript legible? But the worst thing about a physician's bad penmanship is in connection with his recipes. A reference to the prescription-file of any apothecary will sadly confirm this statement. Nothing but long familiarity with such scrawls can enable the pharmacist to decipher the hieroglyphs, and one shudders at the thought of having such documents fall into the hands of a compounder whose imagination has been but slightly

tutored, and whose experience is limited in the interpretation of cabalistic characters. A mistake of the type-setter, made in consequence of the illegibility of the copy, is usually productive of no worse a result than anger on the part of the author and amusement among the readers of the article; but an error of the apothecary on such an account may bring a valuable life to an untimely end. In prescriptions the writing should be so distinct that no word or symbol can possibly be mistaken for any other. Every letter even ought to be well defined; and that there may be no lapse from clearness on these important occasions, it is best to write plainly at all times. The chirography of certain physicians is almost homicidal.

Closely allied to writing is the much rarer accomplishment of drawing. The same faculty which enables a person to learn to write, if cultivated a little more, makes him something of an artist. Any one who has compassed the difficulties of penmanship can learn to draw — not well, perhaps, but sufficiently to give him a pronounced advantage over his neighbor, who knows nothing about the art. One who has no facility with the pencil but faintly appreciates the usefulness of such skill; while he who can sketch, even though it be but little, hardly sees how he could do his work without the assistance of this ability. All through student-life occasions are continually arising in which the helpfulness of the pencil is very apparent: the arrangement of the apparatus on the lecturer's table, the shape of a leaf or flower, the form of a crystal, all are originally represented, and afterwards recalled, much more readily than by any description in words; and the busy doctor, anxious to preserve the memory of a peculiar case — a tumor, a monster, a malformed limb, a crooked back, a misshapen member of any kind — sketches it into his note-book in three minutes, and has it secured for future use, while the record, which he intends to make as soon as he gets time, is never written. The power to draw should be so common as to cease to be considered an accomplishment.

Mathematics require attention. The necessity of a knowledge of arithmetic is too obvious to call for lengthy explanation: without it, no step can be taken towards the higher grades, and the simplest problems involving number are incapable of solution. But the mathematical training must not be allowed to stop at the point where the grammar school leaves the pupil. Many questions in his subsequent course will admit of no comprehensible answer without the help of algebra; and, for the understanding of certain points in physics which find a place in physiological investigations, even the calculus is necessary. Geometry is the key to so many chambers in the halls of natural philosophy that we cannot omit it from our curriculum.

An acquaintance with geography, both political and physical, is more important to a medical student than would at first appear. Deprived of its aid, the whole science of climatology would be a closed book, and, at the present time, this department of knowledge is developing to such an extent and in such lines as to be of peculiar value to physicians. We are learning more and more that certain diseases are produced or, at all events, greatly favored by particular climates and in especial localities, and that other regions are singularly exempt from disorders which prevail elsewhere. All these facts have a marked interest in a most practical direction, and require for their comprehension a familiarity with the conformation of the earth's surface, and the differences of its conditions and productions in various parts.

We come next to consider the study of languages other than English. And first of all start up the claims of Latin. Nowadays it is becoming fashionable to decry the study of ancient languages. They are spoken of as superfluities, nearly, if not quite, useless, and sometimes, if not usually, harmful. With such opinions I have little sympathy. It may well be admitted that, up to a recent date, a disproportionate amount of time has been by many spent upon the classics, to the exclusion of scientific branches which are almost as useful in giving discipline to the mind, and serve better to prepare one for the practical work of life. But the fact that an undue importance was assigned to the classics formerly is no reason for our refusing to recognize any good in the study of them, even in the preparation for scientific pursuits. We should remember that just this berated classical training gave the world as splendid an array of medical men as has ever been seen — intellectual giants, who thought they saw one reason for their success as scientific physicians and surgeons in the thorough drill they had experienced in the dead languages.

There are certain bald facts which stand up persistently and demand recognition. One is that Latin enters largely into the composition of every modern language which it is of importance to the medical student to know, and that an acquaintance with Latin renders the acquisition of any one of these tongues a comparatively easy task. Another prominent and essential fact is that the nomenclature of every science is based directly on Latin or Latinized Greek, and the more one knows about these languages, the better will be his appreciation of the terms he uses, and the greater his ability to employ them correctly. There is less necessity for a familiarity with Latin now than formerly, when all medical works were written in it; but the time will never come when any other tongue will be chosen as the universal basis of scientific terminology, for Latin is, as it were, crystallized, and is not subject to the changes which modern languages are constantly undergoing.

How much of this language should be required as a preliminary to medical study is a question about which there is room for difference of opinion. An eminent teacher has declared that a student can learn in two weeks all the Latin he needs in his medical education. Possibly this is true in the case of a very active mind, but it does not follow that it would not be far better for him to study it a much longer time. Probably the pelts of two sheep would give any one of us sufficient covering for his nakedness and protection from the weather, but we never think of restricting ourselves to apparel of this primitive character. We know that our comfort, convenience and means of usefulness are all augmented by wearing raiment produced by the application of ingenuity, skill and labor to this original material. Our clothing costs more, but it is worth the increased price. Just so with the study of Latin; a little will give a scanty help, enabling the student to understand the ordinary variations in the forms of words, so that, for instance, he will not use singulars for plurals, or nominatives for genitives; it will show him how to frame a prescription grammatically; and it will give him enough of a vocabulary to save him from the grossest blunders in his recipes. But he will

never be able to use the language in any but this mechanical way; he will grope and stumble among his scientific terms, failing to recognize the kinship between nearly related words, obliged to learn arbitrarily by itself every new name, struggling against difficulties which, to one who is better equipped, are no longer obstacles, but pleasures. Any one who has had much experience in teaching medical students must have noticed the difference in the relative ease with which the terminology of medicine is acquired by those who have, as contrasted with those who have not, had a careful drill in Latin.

The student, then, ought to have such a command of the language as will enable him to read simple Latin with tolerable facility, and this can be gained, under competent instructors, by the time he has read Cæsar's Commentaries, a few of the orations of Cicero, and five or six books of Virgil. The teaching ought to be directed not mostly to the memorizing of rules of grammar, though something of this is unavoidable, but it should be addressed mainly to obtaining a mastery of the vocabulary, and the proper use of the language in expressing thought. In other words, Latin should be taught in much the same way as are Italian and Spanish, as if it were a living rather than a dead tongue, as nearly as possible as the Roman children were instructed in it. Thus, it would cease to be regarded as a shrivelled corpse, dry, cold and repulsive, and would seem to be fresh, and warm, and instinct with life — delightful to study, and pleasant and easy to remember.

As regards Greek, a different verdict must be rendered. Admirable as it is in its symmetry, wealth and precision, probably most of the best educated physicians would agree that it has been of little help to them in any department of their life-work. It is true that very many words in medical nomenclature are derived from the Greek, but, before they are accepted, they are converted into Latin and baptized with new terminations. It is also true that, in the veins of all modern languages, there courses a strain of Grecian blood; but here, too, the influence of the Roman is dominant, and, with a knowledge of Latin, one is so well equipped for conquering a living tongue, that the additional assistance afforded by the Greek is insignificant as compared with its cost. With great veneration for Greek as a language and admiration for its completeness and beauty, I would require a medical student to know no more of it than enough to recognize and pronounce its words, so that he can make intelligent use of his dictionary.

In continental Europe, two countries are especially prominent for their activity in medical affairs. Forty years ago France was the great centre to which all flocked who desired to perfect their education, but her supremacy is yielded now to Germany, and Berlin and Vienna, instead of Paris, offer the chief attractions to one who seeks to round out the training of the American schools with continental observation. Still Paris is great in medicine, and continually there are emanating from her physicians instructions which are entitled to the admiration and respect of the world. Many of the articles in the French and German journals are presented to us in abstracts in our magazines, and many books are translated from both languages into English, but the great mass of the literature of these nations is never translated. Some of the most valuable of their works are so costly that American publishers dare not venture on their production. Emerson's remark that he would no sooner think of reading a work in the original, when he had a good translation, than of wading a river when there was a bridge to cross on, has a correct application where translation is laborious, but is worse than pointless to one who has a real familiarity with the language in which the book is written, for, however fine a translation is, it cannot convey in its entirety the impression of the original; a something, often eluding description, like the fragrance of a delicate flower, is lost in the passage from one to another tongue, just as the finest tea loses a certain deliciousness of flavor in its journey across the ocean. Thus, if a student does not know French or German, vast stores of knowledge are locked against him, and the occasional parcels, which are withdrawn for his benefit by men who have admission-keys, are liable to be somewhat battered and torn in the process.

But the student of the present should be able not only to read French and German, but likewise to speak them; for, though this country certainly presents wonderful opportunities for medical study and observation, the facilities of the European capitals are, in some directions, immensely superior to anything on this side of the Atlantic, and every physician of proper ambition, who has not already been abroad for study, longs to go. Unquestionably, the chief reason why many are deterred from making the pilgrimage to these Meccas of medical science is an inability to speak and understand their languages. The preliminary education should, therefore, include a reading and speaking knowledge of French and of German.

The human body being a machine, subject to all the influences which affect artificial mechanisms, as well as to others which are more subtile, an understanding of its action involves a knowledge of the forces which are continually at work in and about it. There is no function of the body which does not necessitate the expenditure of energy, and, therefore, the investigation of these processes requires an acquaintance with the science of natural philosophy. One can never study physiology intelligently without having learned much concerning the properties of matter, the mechanics of solids and fluids, electricity, heat, light, and sound. A single throb of the heart, the merest glance of the eye, even the movement of a cilium on a cell of epitheleum, presents problems to the physiologist which are incapable of solution except by the aid of natural philosophy. And, as disease is not an entity, but a process, a perversion of normal action, in order to comprehend its nature, the aid of the same science must be again invoked. Thus, physics must be given a place in the curriculum.

But these various operations of the human machine cannot be explained by natural philosophy alone. We find that new substances are constantly being formed in the body by the union of two or more which previously existed; and, on the other hand, a single substance is broken up into two or more unlike itself. Nothing can explain these processes but chemistry, and a thorough drill in the elements of this science is as essential to a mastery of physiology as is an acquaintance with physics.

Aside, however, from the utility of chemistry in leading the way to physiological knowledge, it is helpful to a medical student in a way entirely independent of this, and, after a fashion, almost as important. It

trains his mind into a habit of diagnosis, which is of the utmost value to him in his professional career. For example, in the laboratory he has presented to him a solution, containing an unknown substance, which he is to determine. He applies to a portion of the solution a certain test; no reaction occurs, and he knows from this that no member of a certain group of substances can be present. To another portion he adds a second reagent; again no change appears in the liquid, and a second group of bodies is ruled out. So he goes on, treating successive portions with different tests, continually narrowing the field of investigation, until a response is given, indicating that one of a certain group of substances is present. Then, pursuing still the same method, he eliminates one after another of the elements concerned, until but one is left, and his task is completed. How identical is this with the plan which the systematic physician pursues at the bedside of a patient, whose disease does not declare its character at once! The doctor first asks himself: To what great class of maladies does this case belong? The features of one class are absent; it cannot be that; there is no evidence of its membership in a second, so that may be thrown out of the question; and thus, by careful steps, he reviews the various divisions of the nosology, until he reaches a group to which the case must belong; and, finally, by rejecting all but one disease of the lot, he arrives at his diagnosis by exclusion. This exercise in chemical analysis is so productive of a close and accurate method of thinking, that the discipline which it gives a medical student is, perhaps, as valuable as the knowledge he gets from it.

Let it not be thought that I have forgotten that general chemistry is taught as a part of every medical course: the fact is too patent to be ignored. But the only excuse for its being there is simply that many, yes, most students, come to the schools without the smallest knowledge of this science. The professor of this branch must begin at the very foundation in instructing his class, for he knows that, if he presupposes any chemical information on the part of his hearers, his lectures will be unintelligible to them. Really, however, there is nothing medical about general chemistry, however much there may be that is chemical about general medicine. Its study, by right, should be pursued long before the youth reaches the medical school, that he may have a preparation for the physiological instruction there imparted to him.

The student of medicine should devote himself entirely, during his first year, to human anatomy and physiology — the sciences which treat of the structure and functions of that quintessence of dust, man. The human animal, however, is so complex an organism, and the operation of his various parts so intricate, it is desirable that the student who intends to investigate these things should have an opportunity to study simpler forms, passing, by gradual steps, from the lowest of living beings to the highest. Hence, plants should first be taken, as they are the most simply constructed of all things which are endowed with life. Their tissues are comparatively coarse, their organs readily observed, and their processes understood without difficulty; and, while there are vast differences between the highest of them and the lowest of vertebrates, the student cannot fail to observe the striking similarities of structure and function in the vegetable and man. Botany also, like chemistry, furnishes a capital discipline in differential diagnosis. In the analysis of a specimen, the series to which it belongs must first be determined, then the class of this series, next the sub-class of the class, the division of the sub-class, the order of the division, and so on, until the plant is, as it were, run down with merciless certainty. Here, again, we have diagnosis by exclusion, the most systematic, positive, and satisfactory of methods. Such training as this cannot fail to correct slovenly habits of thought, and establish in their stead methodical intellectual processes.

Proceeding upwards from the study of our humblest relations to the consideration of those which are higher in the scale of being, we come to the animal group, some members of which are so like vegetables that we hesitate to draw the line between them. The student should go step by step from those which have a simple to those which have a complex structure, ending with the vertebrates. To these he should devote prolonged and faithful labor, dissecting them carefully with the scalpel, scrutinizing their minute structure with the microscope, tracing the homologies between them and the members of inferior orders, and considering the philosophy of their architecture. Dry and wet specimens should be prepared, injections of vessels and cavities practised, and microscopic specimens mounted. This method is of advantage not merely because it gradually unfolds to the student, in a rational and comprehensive manner, the mysteries of animal anatomy, but also because it gives him expertness in the use of the implements of dissection and of the microscope — instruments which he must use so constantly in his medical course, and ought to use all through his career. The practice is gained, too, on material which is fresh, inexpensive, and easily obtained, whereas, without this experience, his first efforts, with all their wasteful mistakes, must be expended on human cadavera, which, in this country, are often stale, always costly, and generally difficult to procure.

It will be observed that, in all these branches where laboratory work is practicable, it is insisted on as essential to proper training. The student must perform the experiments in physics, analyze the chemical specimens, dissect the flowers and the animals, and mount the microscopical sections. Merely seeing these things done by his teachers, he has not half learned the lesson; actual contact with the fact, and many repetitions of the contact are indispensable to real acquisition.

In all of these studies, the student should be required to make copious notes of what he sees and does. The benefits of this procedure are numerous, but least among them I reckon the preservation of a record of his work. It is of little consequence that he or any one else should be able to ascertain subsequently what his experiments have been, unless they include original work,— a supposition which is wildly improbable; but it is of the greatest moment that, early in life, he should establish the habit of recording the details of his labor, so that, when he enters upon the practice of his profession, he may find it easy to keep an account of each case, and thus have at hand, for ready reference, an orderly accumulation of facts occurring within his own observation, a history of his experience, to which he can refer at any moment, refreshing his memory of former patients, who come again into his field of vision, collecting groups of cases, and tabulating the results of special lines of

work, to the great advantage of his clientèle, the instruction of his fellows, and the advancement of his own reputation.

A department of study to which little attention is paid, but of immense importance to a student, is logic, the science and art of reasoning. Unless he is practically familiar with the rules which cannot possibly be deviated from in sound reasoning, his mental operations are loose and heedless, and he is always exposed to the injurious results of his erroneous deductions. His observation of facts may be keen, his record of them religiously accurate, and his desire to reach the truth deep and enthusiastic; but, if he has not the training of a logician, his conclusions may be so wide of the mark as to make his efforts, at the best, unproductive of good, at the worst, pregnant with evil. Always are we hampered with the products of the bad reasoning of great men in our profession. One, to whom we look up as to an oracle, states a conclusion at which he has arrived, and we accept it as correct. Unable to repeat his experiences and relying on his wider opportunities, we adopt his recommendations, and, when we fail to achieve results like his, we blame our own lack of skill. After we have had years of disappointment, there arises another investigator, a man who has dared to think for himself, and he declares that the facts stated by the first teacher have been misinterpreted throughout, that really they are incapable of the construction which has been put upon them. The cause of our failure is now plain, and, disgusted by our bitter fortune, we are inclined to become sceptical about all the conclusions of all the leaders. If he who affected to instruct us had been trained to logical methods, we would have been spared the humiliation and grief which follow defeat, and our patrons would have escaped our well-meant but useless ministrations.

As the labor of no one of the learned professions requires more intellect than the medical, so also in none of them is there more need of a sound body. The unavoidable irregularity of his meals, the frequent disturbance of his sleep, his exposure to the inclemencies of the weather, and the anxieties by which a physician in active practice is constantly harassed, combine to form an array of depressing agencies which often overwhelm a seemingly invulnerable constitution. Consequently it is a necessity of the case that a young man entering upon the study of medicine should bring to his work a body that is free from disease and full of vigor and elasticity. However richly a youth may be endowed with these qualities, a failure to observe the laws of hygiene will undermine the glorious fabric and leave it a ruin. The physical training of a young man contemplating medical study should never be neglected. He should be taught early that the preservation of the integrity of his body is a duty which he owes to himself and his possible offspring — a duty which cannot be violated with impunity. He should be indoctrinated with the great truths of hygiene, and imbued with an ambition for high health. Thus he will come into the profession with unusual power to resist malign influences, and will be a physical delight to himself and a noble example to others.

Finally, though by no means least in importance, there should be embraced in the preliminary course of the medical student instruction in ethics. I intend no disparagement of any other calling in expressing my conviction that in no profession is there so great need of correct ideas of duty as in the medical. The physician meets his fellow-beings in relations more delicate and trying than those in which any other man is put. It is he who is made the confidant of youth and manhood and old age; who carries with him the secrets of prince and peasant; who sees the sufferings which are disclosed to none else. No other man is habitually exposed to temptations as terrible as his. The lawyer's work is subjected to the jealous scrutiny of an adversary; the clergyman is the constant target of hundreds of curious eyes; but the physician does his task in the privacy of the sick-room, with no competent critic standing near to inspect his performance. He can conceal his mistakes so cleverly that they are unsuspected; he can turn his bungling into reasons for his patient's gratitude; he can multiply remunerative visits far beyond the needs of his cases. His knowledge of the innermost histories of his patrons gives him a power over them which he can wield to his pecuniary profit. In such circumstances how essential it is that the physician should have clear conceptions of right and wrong! But in no other relation does the need of inflexible morality appear as conspicuously as in his association with women. He should ever bear in mind that it is not simply faith in his skill but confidence in his honor that induces women to place themselves in his professional care, and that a violation of this trust is worthy of, and will receive, the execrations of all decent men. It is impossible for a physician to be too scrupulous in his conduct toward the other sex. The preservation of purity of life and the cultivation of a genuine respect for the rights of others is a branch of the preliminary education which none can afford to neglect.

Doubtless the exactions of the plan presented in these pages will seem to many to be too severe. They will object that the scheme requires so great an expenditure of money and time that many young men of excellent talent and enthusiastic bent towards medicine will be excluded from the schools. But, if a boy of fourteen, robust and bright, who had already learned to read and write English, had mastered a common-school arithmetic, and had acquired a fair knowledge of geography, were to devote himself to the proposed course of study under good tutors, working only as much as is consistent with the maintenance of a high degree of health, he could cover the whole ground creditably in six years at the outside. No reasonable person would want a boy to attend a medical college before he was twenty years old, and unless I am grievously mistaken, the youth in question would be prepared for his professional course at that age.

This disposes of the question of time; next comes the criticism based on the money cost. Without doubt many who now go through our schools would find an insuperable obstacle in the necessity for a large outlay for a preliminary education, but the loss which the profession would sustain by their exclusion would not be serious. If a man of the right stamp really wants to be a physician, poverty will not keep him from entering the profession, and he will accept the preliminary requirements with a conviction of the correctness of the principle which underlies them. Those who rebel against these exactions have not in them the stuff that good physicians are made of.

It will probably be argued that some of the most brilliant members of the profession had but a scanty early education. Granted; but they were geniuses,

as few men are, and it would be absurd to make our rules with reference to such prodigies and their needs, rather than for the average man and his wants. Besides, such an education would be helpful even to a genius; the great John Hunter would have been improved by it, for it would have made him a better English scholar, at the very least.

Perhaps there are some who will consider the scheme too narrow. It may be said that a physician should be an accomplished gentleman, versed in literature, science and art, one whose very presence would be charming to the most refined and cultivated patients. It is readily admitted that no equipment is too good for a physician, but we must not expect impossibilities, and too exalted and variegated a standard might result in the production of a race of doctors like Talleyrand's, who knew "a little of everything, even physic."

THE MINIMUM STANDARD.

Of the great number of medical schools in the United States, comparatively few have a genuine entrance examination, and only a minority of these require more than a meagre grammar-school education. Many of the most prominent, influential and numerously attended institutions make no mention of the subject in their announcements, and recently one of the most celebrated took pains to state that no evidence of preparatory study was demanded, thus putting a premium on ignorance and unfitness. In other words, our medical schools largely assume an attitude which practically proclaims their belief that no preliminary study is necessary. The pitifulness and melancholy error of this position need no further presentation to this society.

If such a plan as that proposed in the preceding pages were to meet the approval of those having in charge the medical schools of this country, it would be impracticable to apply the system immediately; so great a change must be brought about gradually. That something of the kind will ultimately be done it is a pleasure to believe. But meantime it is evident that many intermediate steps must be taken. First, the managers of the schools must be persuaded that to encourage a person to pursue a course in medicine who has had little or no previous training and is ignorant of those branches which are the proper prelude to medical study is an act of injustice to the would-be student, of degradation to the profession, and of inhumanity to the community. Next, it must be proven to them that they have no right to throw the responsibility of the student's preparation upon his medical preceptor, as so many of them do, for the preceptor will not, as a rule, insist upon the pupils knowing any more than the schools require. Finally, the lowest preliminary requirements must be agreed upon, and religiously exacted at every school.

The remainder of this essay will be devoted to a statement of the minimum of attainments which medical schools should require of students before admitting them to the study of medicine, with such additional remarks as may be necessary to the elucidation of the subject.

In the first place, the student should have a thorough training in the branches taught in the common schools. It will doubtless strike many as absurdly superfluous that this requirement should be mentioned; they take it for granted that every man who aspires to be a physician has much more education than this. But such confidence betrays their lack of knowledge of the material with which medical teachers sometimes have to deal. If the matriculants in one of the metropolitan schools were to be subjected to a severe scrutiny as regards their attainments in this direction, developments would be made which would excite both mirth and pity. It would be found that many are unable to compose a business letter of moderate length without glaring mistakes in orthography and syntax; to give correctly the boundaries of the State of their residence; to solve a simple arithmetical problem; to read intelligently a news column of a daily paper. Occasionally one would be discovered whose skill is so severely taxed in making his autograph that he will misspell his own name. Extravagant as all this seems, it is merely a statement of actual observation. I have known a single candidate, who was nineteen years old, had attended school four years, and had studied medicine with his father, a physician in active practice, to give the following answers: Germany is in South America; Europe, Asia and Africa also are in South America; Russia is in North America, about five hundred miles from New York City; England is in Russian North America; New Orleans is north-east from Indiana; water freezes at thirty-three degrees below zero, and boils at one hundred and two above; the torrid zone is hotter than the frigid on account of climate; summer is warmer than winter because of temperature; all animals are called quadrupeds; mosquito is spelled m-o-c-q-t-o; if two apples cost three cents, twelve will cost thirty-six cents. It is one of the commonest experiences of the entrance examiner to read the essay of a man who has both a paucity of ideas on any subject that may be selected for his composition, and an almost utter inability to express the few notions he has with any approach to clearness or fulness, to say nothing of elegance or even accuracy. The vocabulary of some medical students is so limited that they not only cannot give intelligible utterance to their own thoughts, but cannot comprehend much of what is spoken to them in the lectures of their professors. How preposterous it is that such men should receive any encouragement to enter upon the study of medicine!

We must insist, then, upon a display of a competent knowledge of the fundamentals. The student must show that he knows his mother-tongue; that he can read English intelligently, hear it with understanding, and express ideas clearly in it; that he can write plainly; that he can make ordinary arithmetical calculations; and that the chief facts in political and physical geography are familiar to him. In addition to these, the elements of algebra should have been mastered; Latin should have formed such a part of his study that he can translate passages at sight from a Latin reader; and the foundation principles and leading facts of natural philosophy should be to him as household words. His body should be healthy and strong, his mind active, and his morals pure.

These preliminary requirements are scanty, indeed, but what a change in the character of the classes in our medical schools would take place, if they were to be enforced! The difference, moreover, would not be such merely as one would ordinarily anticipate, but would be much greater. The poorly-prepared, and those altogether without preparation would not venture to apply for admission, and many of those who

had undertaken to qualify themselves to the extent specified would perceive the enormous advantage of still further equipment along the same lines, and would extend their studies in the direction of a liberal education. This statement is not the result of a mere conjecture, but of observation of the practical working of such a rule.

Gradually the standard could be elevated; and, in less than a generation, the whole aspect of medical education in America would undergo a change of the most radical character. A chief obstacle is the desire of the faculties of medical schools to have large, and, consequently, lucrative classes. Each thinks, and with considerable reason, that, if it takes the step proposed, its classes will diminish below the paying point, and its rivals will acquire what it loses.

It seems to me that the Academy can exert a most healthful influence upon the medical schools of this land, and do much to convince their faculties that a genuine requirement of preliminary education should be enforced, and that such a standard as has just been explained is the least that will justify a physician or a school in permitting a person to enter upon the study of medicine.

Original Articles.

THE TREATMENT OF PROLAPSE OF THE UTERUS AND VAGINA, ESPECIALLY IN THE AGED, WITH ILLUSTRATIVE CASES.[1]

BY CHARLES M. GREEN, M.D.

It is not intended in this paper to consider the treatment of those minor degrees of prolapsus uteri of such frequent occurrence during the child-bearing period, which are generally associated with anterior, posterior or lateral displacement, and complicated with, if not caused by, inflammatory changes in the parametrium. In these cases treatment is primarily directed to the removal of inflammatory exudations; and the use of pessaries, or the application of any operative procedure, is expressly contra-indicated until that result shall have been accomplished. But attention is invited to the consideration of a class of cases of less frequent occurrence, in which the uterus and vagina are wholly or in part without the vaginal introitus, — constituting in effect a genital hernia, the bladder and rectum usually sharing in the hernial protrusion. These cases occur chiefly in multiparous women advanced in years, still obliged to lead laborious lives; but they are sometimes seen in the nulliparous under favoring conditions.

Prolapse of the uterus and vagina originates principally in one of two ways:

a. The perinæum has been badly torn, and the anterior vaginal wall thereby deprived of the normal support of the perineal body: a cystocele thus developes. The recto-vaginal septum also bulges forward and downward. The descending vagina thus drags down the uterus, even though it be of normal size and weight until its position shall have induced secondary changes from disturbances of circulation: a frequent result of this traction on the uterus is an hypertrophic elongation of the cervix.

b. Frequent child-bearing, with insufficient rest in bed, has resulted in a condition of subinvolution both of uterus and vagina, and the consequent increase in the weight of the uterus unduly taxes the sustaining powers of the peritoneal folds which suspend that organ: thus the unsupported uterus descends by its own weight, and drags with it the vagina. Not infrequently the cervix has been badly lacerated, and has undergone hyperplastic changes which add to its size and weight. In the nulliparous, prolapse of the vagina and uterus may occur from the presence of uterine tumors, the enlarged and heavy uterus distending the vagina and finally dragging it into complete inversion.

While partial or complete prolapse may occur strictly in either one of the two ways above mentioned, it is probable that in most instances both factors are operative: the heavy uterus presses from above, and the descending vagina drags from below. Although the foundations of future trouble are laid during the child-bearing period, external protrusion often does not occur until after the menopause. Owing to the disturbed circulation of the prolapsing parts, the atrophic senile changes do not take place. A potent factor in causing genital hernia then becomes operative, namely, the enfeebled muscular tonicity of advancing years, the descent of the parts being favored in a manner analogous to the formation of intestinal hernia in old men.

Unless produced suddenly by some great strain or unusual effort, genital hernia is developed gradually from the causes above alluded to, and entails symptoms which usually lead the patient to seek relief before extreme degrees of prolapse have occurred. Such cases are, therefore, never seen among the well-circumstanced, except in those rare instances in which a morbid sense of delicacy has prevented the patient from taking advice until the extrusion of the parts has compelled her to do so. But among the laboring poor, accustomed to lift and carry heavy burdens, who often bear uncomplainingly the minor ills of life, and especially in the aged and neglected drudge, early symptoms are often ignored; and in this class, therefore, complete inversion of the genital canal is not infrequently seen. When the prolapse has reached any considerable degree, the inevitable attrition soon results in abrasions and ulcerations: want of cleanliness and the fetid discharge from sloughing tissues make the patient an object of offence to all about her. The usual displacement of the bladder renders the complete emptying of that viscus no longer possible, and the distress of cystitis is added to the discomfort and pain from the hernial protrusion. The condition of the patient is indeed pitiable: she can neither stand, sit, nor walk, is at last unable to work, and becomes a burden to herself and her family.

The treatment of these cases is usually most trying and unsatisfactory in ambulatory practice: after the digital reposition of the prolapsed parts, temporary rest in bed is generally indispensable to success in the application of any method of treatment. The means at our command, from which we are to choose according to the circumstances and indications of each case, are the astringent tampon, pessaries, and the various surgical procedures,— colporrhaphy, anterior and posterior, colpo-perineorrhaphy, amputation of the infravaginal cervix, removal of the uterus, shortening of the round ligaments, and the formation of cicatricial contractions of the vagina by the use of the thermo-cautery. Such of these measures as have been utilized in my own experience will be commented on *seriatim*.

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The temporary use of the astringent tampon is a valuable antecedent to any method of treatment: by its means, the patient remaining recumbent, not only are the parts retained *in proprio situ*, but abrasions are healed, the circulation is improved, the drawn-out cervix is enabled to retract, and the uterus is often considerably diminished in size. These changes are materially aided by the depleting effect of glycerine, with which the tampons are moistened,— the copious watery discharge relieving the congested vessels. The astringent most applicable is tannin, and it is my custom to use it in a twelve and a half per cent. solution in glycerine. To be most effective the tampon should consist not of a single large wad of cotton, which may indeed retain the parts *in situ*, but of small pieces applied with care in such a way as to bring the medication in contact with every part of the vagina. Common carded cotton is preferable to the absorbent, being more elastic and less easily matted together. After from ten days to two weeks in bed, the patient may be allowed to sit up and walk about; and were it not that this method required the frequent services of the physician, the long-continued use of the tampon would be advisable in many cases not suitable for more radical treatment. Intelligent women may often be taught to make and use themselves a cotton ball of suitable size to retain the parts, when the uterus is not much enlarged, and when other measures are contraindicated. The value of the tampon is well illustrated by the following case:

Mrs. T., widow, seventy-two years of age, bore her third child at the age of forty-eight, and passed the climacteric at fifty. For twenty years she had been troubled with prolapse, but had become much worse in the past three years. She had never sought medical advice, her family ignoring her complaints until her presence became obnoxious to them on account of the offensive odors of her person. When she entered my consulting-room at the Boston City Hospital, I judged from the usually unmistakable odor that her case was one of uterine carcinoma; but examination revealed a condition well shown in this photograph.



The hernia was as large as a cocoanut, and consisted of the entire vagina and uterus and part of the bladder. There were several erosions and ulcerations, emitting a foul, purulent discharge. The vaginal wall was thickened. The uterus measured only a little over three inches in depth and was not therefore sufficiently heavy to have dragged down the vagina, but rather was dragged down by the gradually prolapsing vaginal walls. The patient for some time had been unable to empty her bladder, but passed urine frequently and in small quantities. Examination showed the urine to be slightly alkaline, specific gravity 1010, and to contain hyaline and finely-granular casts. The hernia was easily reduced; but a well-marked cystocele still protruded. Treatment consisted of rest in bed, glycerite of tannin tampons, and such general measures as the enfeebled condition of the patient demanded. In two weeks the ulcerations were healing rapidly, and in three weeks Mrs. T. was allowed to sit up most of the time. The mental condition, however, was unsatisfactory, and several attacks of unconsciousness and great general prostration (due in part to chronic diarrhœa) presaged an early lethal issue; there was therefore no indication for further local treatment, other than the continued use of a retaining tampon.

Pessaries of many kinds have been devised for the treatment of prolapsus, and some of them are of value in suitable cases; but experience has taught me that the safe and effective use of a pessary demands the exercise of a greater degree of care and intelligence on the part of the patient than is to be found in the majority of those suffering with the affection under consideration. Indeed, my rule is never to use a pessary in any patient until her docility has been thoroughly tested, preferring, if no other measure is available, to do no good rather than to accomplish temporary good at the risk of subsequent harm. It is well known, but not always remembered, that, if a pessary is efficient in retaining the parts, subsequent senile atrophic changes will often so narrow the vagina that the instrument is imprisoned and may cause serious ulcerations before the patient, by subjective evidences, is aware of it. Such cases are occasionally seen, in which the pessary has to be broken up before it can be removed. Within a year I have seen a case of cervical epithelioma undoubtedly caused by a long-worn and neglected pessary. This instrument should be used, therefore, only when it can be watched, the patient returning at stated intervals for the removal and cleansing of the pessary and for the inspection of the parts. Sometimes a patient can remove, cleanse, and replace her own instrument: in such cases the physician's attendance may be less frequent.

With those forms of pessary consisting of a cup supported by a stem and kept in place by external bands and belts I have had no experience, believing their use to be attended with too much annoyance and irritation about the external genitals and perinæum. When the prolapse is not extreme, I have often found the inflated, soft-rubber, doughnut-shaped pessary to be effective and safe. It will not, of course, raise the uterus to its proper place; but with care it will keep the parts within the introitus, and serve as a palliative measure when the various surgical procedures are contraindicated.

Mrs. C., aged seventy-six, multiparous, had probably suffered with a gradually-increasing prolapse for many years, but had borne her affliction in silence,

and it was only in the latter months of her life that the protrusion was discovered by her nurse. It was found that the uterus had undergone senile atrophy, and in the recumbent position was still within the introitus; but the vagina was prolapsed, and there was also a considerable prolapse of the urethra. Only palliative treatment was indicated, and this was successfully accomplished, after several trials, by the use of the inflated, soft-rubber pessary, by the help of which the parts were retained, and the patient enabled to go down stairs and go out driving. The prolapsed urethra retracted under the use of astringents, and gave no further trouble.

The opinion is held by many that the surgical treatment of genital hernia in the aged is unwise and unwarrantable, and the various objections given are, — that it is often unsuccessful; that, even if successful at first, the prolapse will recur; that it is not always safe to operate; that it is not worth while. Excluding from consideration the Alexander-Adams operation of shortening the round ligaments, and the operations for the removal of the uterus, I am unprepared to believe that the usual surgical methods are attended with more danger in the aged, if the patient is in suitable condition, than in those less advanced in years. Organic disease of vital organs should of course be given due prognostic importance in either old or young in considering the advisability of operative treatment; but age alone I do not recognize as a contraindication. Nor has experience taught me that primary and lasting success is less frequently attained in the aged than in the young: in fact, if intelligently performed, the restoration of prolapsed parts in those who have passed the child-bearing period and who have for whatever reason discontinued marital relations should be attended with better chances of lasting benefit than in younger women; not only because in the former senile changes diminish the possibility of subsequent prolapse, but also because the celibate condition warrants an almost complete closure of the vagina.

Whether or not operative treatment is worth while, the patient will often decide; but I never hesitate to advise a woman suffering with this infirmity, but otherwise in good health, to give up two or three months or less to radical treatment with a good prospect of entire relief, rather than to subject herself during the remainder of her life to the never-ending annoyance, inconvenience, and sometimes danger, of treatment with pessaries, which may be only partially successful.

Mrs. D., multipara, sixty years of age, for ten years a widow, came from another State to seek relief from prolapse of the uterus and vagina, which began to protrude twenty years before and for ten years had been outside the genital fissure. She complained of pain in the head and back; was unable to walk, stand, or sit without pain and discomfort in the prolapsed parts, and was comfortable only when lying down. Her general condition was fairly good; but her nervous system was in a measure unstrung by discomfort and pain. Defecation was always difficult: urination was frequent and sometimes painful on account of the prolapse of the bladder.

Physical Examination: Perinæum torn to sphincter, perineal body gone; vagina subinvoluted, thickened, and entirely prolapsed; uterus external to the vulva, enlarged, the cavity measuring four and a half inches; the cervix and vagina were the seat of many abrasions and ulcerations.

Treatment: The uterus and vagina were replaced and retained with tampons, the patient remaining in bed; a ten per cent. solution of nitrate of silver and a twelve and a half per cent. solution of tannin in glycerine were used to heal the abrasions. In less than three weeks the size of the uterus was reduced to three and a half inches in depth, the diminution of one inch being doubtless due in great measure to a retraction of the cervix. There being no apparent contraindication, the patient was then etherized, a large elliptical piece removed from the whole length of the thickened anterior vaginal wall, and the wound closed with sixteen sutures: a moderate venous oozing was controlled with hot water. Ten days later the parts were exposed and the stitches removed: the lower angle had failed to unite well; but two weeks later, when the patient was again etherized for posterior colporrhaphy, it was noticed that there had been no prolapse of the as yet unsupported anterior wall. The denudation for the second operation was carried well up the posterior and lateral walls of the vagina, and the wound closed with seven silver sutures, thereby narrowing the vagina and building up a large perineal body. During the convalescence the patient had considerable nervous disturbance with hallucinations, and several times she got out of bed in the momentary absences of the nurse; but on the removal of the stitches on the thirteenth day it was found that there was good union except externally, that is, at the base of the perineal triangle.

Ten weeks later Mrs. D. presented herself at my office, happy in entire relief. Examination showed a firm perineal body, the vagina would admit only the index finger, and the uterus was high in the pelvis: not wishing to distend the parts with a speculum, I did not measure the depth of the uterine cavity. The patient then returned to her distant home, and I have no proof that the result obtained was permanent; but apart from the probability that I should have heard from the case had the prolapse returned, it seems to me hardly possible with the vagina narrowed to the size of the index finger, the uterus diminished in size and weight and under favorable conditions for undergoing senile atrophy, that the parts could again descend to their previous position.

Mrs. R. C., a widow, sixty-five years of age, had borne six children, the youngest being thirty-two years old. She was a sober, industrious housewife, and her health had always been good until about a year before I saw her: at that time she was somewhat debilitated and began to suffer with "falling of the womb." At the time of consulting me she declared she was in perfect general health, and wished only to be relieved of the local trouble, which alone prevented her from performing her usual household duties.

Examination disclosed a complete prolapse of the anterior vaginal wall, which was thickened and whitened from attrition and exposure: the cervix protruded from the vulvar cleft, and the perinæum was torn; but there was no marked protrusion of the posterior vaginal wall. The uterus was not enlarged. The patient readily acceded to operative treatment; she was therefore kept in bed for a week and the parts retained with astringent tampons. It was at first proposed to remove a portion of the anterior wall before

closing the perinæum; but, as the uterus was not heavy, it was finally decided to make a more extensive denudation of the posterior wall and practically close the vagina, in the belief that in this way efficient support would be given to the anterior wall and subsequent prolapse prevented. The denudation was therefore carried well up on the sides of the vagina and to Douglas's cul-de-sac posteriorly: the wound was closed with silver sutures and dressed with iodoform by insufflation. The vagina would not admit the index finger.

The patient was comfortable after the operation, having scarcely any pain or constitutional disturbance: the temperature was normal on the third day. The next day, however, there was pain in the right labium, and a small abscess formed: this was opened externally and in no way interfered with the success of the operation. The stitches were removed on the ninth day, and two weeks later the patient was allowed to sit up and begin to walk about. Examination showed that perfect union had taken place and that the vagina would admit only a large-sized lead pencil. The general condition was excellent, and the patient returned to her family in just a month from the time of beginning treatment.

About five months later Mrs. C. returned for inspection of the parts: she was in perfect health, the vagina would admit only the index finger, there was no protrusion, the uterus was high in the pelvis and undergoing senile atrophy. Six months after this visit the patient again returned at my request. During this time she had performed her usual duties and had remained in good health: there had been no change in the local condition, the uterus still remaining high and the vagina narrow. It seemed to me, therefore, that her relief would be permanent.

The following case is reported not as a surgical success, but for its intrinsic ætiological interest and as an illustration of what is perhaps the best method of dealing with such cases under similar circumstances:

E. M., fifty-two years of age, single and nulliparous, a retired serving-woman, had passed the menopause ten years previously, at the age of forty-two. She had always been well and strong, but for the past twenty years had noticed a hard lump above the pubes and to the right: this, however, gave her no trouble, and she now sought relief from "falling of the womb."

It was found on examination that the vagina was entirely inverted and protruding from the *rima pudendi*: the uterus measured four and a half inches in depth and also protruded as far as the length of the vagina would allow. The pelvic brim was occupied by a hard, non-fluctuating tumor as large as a cocoanut, which was evidently a sub-serous, fibroid enlargement of the fundus uteri. Various pessaries had been tried to retain the parts within the vulva; but they either failed of their purpose or caused ulcerations necessitating their removal; the future treatment of the case therefore caused me serious consideration. Removal of the uterus seemed to afford the only sure hope of curing the prolapse; still as the tumor gave rise to no symptoms other than those caused by the hernia, so serious an operation was to my mind unwarrantable. On the other hand, with such a heavy mass pressing from above, narrowing the vagina, seemed an almost futile procedure. In the hope, however, that with advancing years the uterine tumor would diminish in size, I determined to perform the latter operation, and afford at least temporary relief.

After preliminary treatment with rest in bed and astringent tampons, the vagina was narrowed by colporrhaphy posterior, and three weeks later the patient was allowed to be on her feet again. Examination a week afterwards showed firm union to have taken place, the vagina would barely admit the index finger, the uterus was high and the cervix only just within reach.

The patient was not seen again until two months afterwards, now three weeks ago. It was then found there was some dilatation of the ostium vaginæ and a slight protrusion of the vaginal walls. The future issue of the case is doubtful; but, if the patient continues under my care, I shall endeavor to keep the parts within the vulva with a soft-rubber pressary, or with a cotton wad and T-bandage. And if this object can be successfully accomplished, senile atrophic changes in the tumor may ultimately so far reduce the weight of the uterus that a hard-rubber pessary can be worn.

THE FUNCTIONS OF THE THYROID GLAND.[1]

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THE functions of the thyroid gland have for many years been a subject of much interest to the medical profession. Our opinions have almost all been based on theories and conjectures until the last few years, when our knowledge has reached a much more definite status by the conclusions reached by experimenters, and students of this subject.

These conclusions are that the thyroid is a true gland, and that it holds a position of the most vital importance to the proper performance of our functions. For the further elucidation of this subject, we are indebted to the medical and surgical profession chiefly of England, Switzerland, Germany, and Italy, while America has furnished us with very little information.

The thyroid gland is a bi-lobed, dark-red, and vascular organ, enclosed in a thin, firm, fibrous capsule, from which numerous prolongations are given off to form a network on the interior. The meshes of the network contain a few elastic fibres, but contain chiefly vesicles, which form the body of the gland. These vesicles are minute, ovoid, spherical, or flattened bodies, and consist of a homogeneous, connective-tissue, basement membrane, lined with a layer of columnar or cubical epithelial cells, the whole enclosing a yellowish, transparent fluid. The cells contain nuclei, sometimes nucleoli, and have a tendency to undergo colloid degeneration, becoming swollen, and then rupturing, empty their contents into the cavity of the vesicle.

Granules, cells, and, according to Baber, large numbers of colored and colorless blood-corpuscles, are to be found in the interior of the vesicles. The colored cells are in a state of partial disintegration, and are supposed by some pathologists to be red blood-corpuscles destroyed by the natural function of the thyroid gland. The gland is very richly supplied with blood-vessels, and its lymphatics form huge lacunar spaces just outside of the margins of the alveoli, and these lacunæ probably serve to absorb the mucinoid substance found in gland, and then to carry it into the general system. Although having no duct, there

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seems to be sufficient reason for believing that the thyroid is truly glandular in its nature. In studying the physiological functions of this organ, we must consider, firstly, what significant symptoms are produced by diseases in which it is involved; and secondly, what effect upon the system does the entire or partial removal of this body produce either from necessity in human beings, or for experiment in animals. The thyroid is involved chiefly in three diseases; namely, myxœdema, cretinism, and exophthalmic goitre, the first being attended with atrophy, and the other two with hypertrophy; and it is to these diseases that we must turn to ascertain the symptoms produced by an interference with the functions of this body by pathological changes. Myxœdema was first described by Sir William Gull, although he spoke of it as a cretinoid state, the present name being given to it later. Ord afterward described the disease more fully, and has received from some quarters the credit due to Gull for having first called our attention to this condition. In every case of myxœdema, we find decided atrophy of the thyroid body — a condition variously described by authors as due to either disease of the trophic centres of the medulla oblongata, primary affection of the gland itself, or compression by the mucin deposited. The patient presents an appearance which is very striking. The face has a puffy, pallid, œdematous appearance; the lips and wings of the nose are protuberant and much thickened; the abdomen becomes prominent, the hands are flattened and swollen, and the skin is rough and dry. The apparently œdematous portions of the body do not pit on pressure, but are firm to the touch. Later in the disease, the expression of the face is heavy and unintelligent; the speech grows slow, uncertain, and hesitating; the gait appears clumsy and unsteady; the respirations and cardiac contractions are found to be depressed; the blood assumes a thin, watery condition; and the mind loses its activity and strength, until finally the victim of this disease is idiotic. There is no change in the kidneys, although, in the last stages of myxœdema, the urine is increased in quantity and contains albumen.

A few autopsies on these cases have revealed the presence of an increased amount of connective tissue in all of the organs, accompanied by the deposit of a thick, transparent, and slimy substance, similar to mucin. This mucinoid material may destroy the parenchyma of the organs involved by the pressure its presence produces. The disease is apparently a trophic neurosis, due to a disturbance of the central nervous system, accompanied by atrophy of the thyroid gland. We will next turn to cretinism, which is a peculiar condition, marked by deformity, idiocy, and goitre. It is found to effect people living in valleys of the Alps, the Pyrenees, and the Himalayas, and although many investigators have ascribed miasma and locality as its cause, the fact remains that the thyroid is involved in most of the cases, and, therefore, cannot be normally carrying on its functions. A Cretin is usually very short in stature; has a large, peculiarly flattened head; vacant, unintelligent countenance; thick lips, flat nose, large tongue, red, watery, and often crossed eyes; and a cadaverous, rough, dry skin. Idiocy of the lowest order is usually their condition.

The symptoms of exophthalmic goitre are well known to us, and we may divide them into three groups, consisting of bronchocele, protrusion of the eyes, and functional heart disease. Anæmia, chlorosis, or any factor which may depress the vitality may be the apparent cause of this disease. The fact that the exophthalmia disappears after death, and may be reduced by pressure during life, makes it probable that the cause is due to the intra-orbital bloodvessels becoming dilated, and not to the presence of an abnormal amount of adipose tissue at the back of the orbit. In most cases of this disorder, we find the cardiac contractions increased in frequency, and associated with a very distinct murmur, but in other cases the action of the heart is less frequent than normal. In the latter class, we very frequently find decided mental impairment; delirium, and epileptiform convulsions being often present. All of the symptoms appear to be due to an interference with the central nervous system, and although some writers have located this neuropathic condition at the cervical portion of the cord, or in the medulla, we have no definite proof that this is correct. It has been necessary for me to pass over these three diseases in a hurried manner, but I hope it is apparent to all of you that they are due to a disturbance of the central nervous system, and that interference with the functional activity of the thyroid gland is an important pathological factor.

To Kocher, of Berne, Switzerland, we are indebted for a very complete report of the symptoms following partial and complete removal of the thyroid gland. Having performed thyroidectomy on one hundred and one patients, his mind was first directed to the results following the operation by the appearance of one of his cases a few months afterward, when called in consultation with another physician. This case having disappeared from his notice for a number of months after the complete healing of the wound, he was surprised to find, when he again had an opportunity to examine the patient, that symptoms of a peculiarly striking nature were present. These symptoms, when described, we will all recognize as being similar to those of myxœdema. Desiring to investigate the subject, Kocher communicated with all his cases possible, and succeeded in personally seeing thirty-four of them, and obtaining letters from six.

From twenty-four of these patients he had removed the entire thyroid body, and from the remaining sixteen had removed only one-half. The latter were all in good health, but only six of the former were well, and three of these had present a supernumerary gland, which seemed to replace the thyroid. The remaining eighteen were all suffering from the same train of symptoms, differing only according to the time of removal of the gland. These symptoms clearly indicated progressive disease. First was noticed heaviness of the limbs, inability to endure fatigue, mental inactivity, dryness of skin, loss of hair; swelling of face, hands, and feet; anæmia, and finally, decided mental failure. Kocher applied to this condition the name of Cachexia Strumapriva, meaning Struma-goitre, and fully described it, without knowing of the symptoms ascribed to myxœdema by the English investigators, especially by F. Simon.

A year before Kocher's report, Reverdin, of Geneva, claimed that feebleness, anæmia, pallor, and swelling of the face and hands, followed complete thyroidectomy, but never placed his views before the profession with the same force that we find attending the statements of Kocher.

Wölfler has collected histories of sixty-eight cases of thyroidectomy performed by Billroth, from all of

whom the entire organ was removed, but arrives at very different conclusions from Kocher. He was unable to find any of the characteristic symptoms described, and claimed that complete removal was no more dangerous than partial.

Bardeleben contended while discussing Kocher's paper that the cachexia strumapriva of the Swiss surgeon was due to the disease itself, and the locality of the homes of the patients, and consequently this condition would have developed even had the gland been allowed to remain.

We have an assertion from Rankin which is very important in considering the cause of, or result from bronchocele, for he reports that of two thousand cases he had seen in India, not a single case of anæmia was he able to find among them. Experimental thyroidectomy has thrown much light on this subject. Cats and dogs, from which Schiff removed the entire thyroid body all developed a dull, heavy manner, with itching, paræsthesia, tremors, paralysis, and arterial dilatation. Inside of twenty-five days death had occurred in every case, although the wounds healed kindly in a few days. Horsley, of England, performed his experiment on monkeys and has given us a most accurate and complete account of the results obtained. The wounds healed completely in about three days, but at the end of about five a well-marked fibrillation was present, affecting chiefly the intrinsic muscles of the hands, jaws, and feet, this condition being followed by constant tremor, then by paroxysms, afterward by convulsions, and finally the fibrillation returned and death ensued. A few days after the operation the monkeys became languid and feeble in their movements, puffy around the eyelids and abdomen, and showed a marked lowering of temperature, pallor of skin, and leucocytosis, followed by oligæmia. Sometimes a partial hemiplegia was noticed, and although the motor centres appeared much involved, the sensation was very little impaired until near the end. The animals all died in a comatose condition in from five to seven months after the operation, and post-mortem examinations revealed hypertrophy of the fibrous elements of the connective tissue; mucinoid transformation of the ground substance as evinced by the presence of a shining, sticky substance; and an atrophic condition of the adipose tissue. These changes were associated with hypertrophy of the salivary glands, and instead of the excretion of saliva the glands were found to be pouring out mucin. The mucous membranes were much swollen and covered with an abnormal quantity of mucus. Marked distension of the meshes of the pia mater was found, and the central nervous system was decidedly anæmic and atrophic.

Horseley maintained that tremor in these cases was probably of central origin, from the fact that the pathological changes were found there and none apparently in the nerves; also that division of the nerves supplying the affected muscles had no result, that inhalation of ether increased them, and that reflex action caused them to disappear. Examination of the blood demonstrated that it had increased in its number of white corpuscles, decreased in its proportion of red corpuscles, and lost some of its power to coagulate. Lanquirico and Canalis, of Italy, extirpated the thyroid body of twelve dogs and obtained results corroboratory of Schiff. All the animals died inside of sixteen days. Anæmia and œdema of the brain was found at the autopsy, and but slight changes in the blood. Zesas experimented on dogs and cats, and all died within a few weeks. Marked cerebral anæmia was present, and to this he attributed the dull, weak, and progressive marasmic condition attending his cases. A few cases operated on by Wagner have still further confirmed the results of Schiff, for although the animals died in a few days, and probably from the operation, the nervous symptoms noted, indicated a disturbance of the central ganglia. Kaufmann has attempted to contradict the conclusions of these experiments, by operating on three dogs and exhibiting the results. One died in five weeks from distemper, and the other two were living nine months after the operation, but according to Zesas were very emaciated. However, Kaufmann, Wölfler, and Tauber support Bardeleben in opposition to Kocher. It is also asserted that the last named surgeon's patients were quite young, and that he would have had better success in older patients whose constitutions were more matured. This is somewhat disproven from the fact that only nine of Kocher's patients were under twenty. Having described the symptoms accompanying disease of this organ and the conditions following thyroidectomy, let us now turn to a consideration of the deductions made by these eminent experimenters and physiologists. Schiff, Lanquirico, and Canalis concluded that the thyroid gland exercises a great influence over the nutrition of the central nervous system; Zesas holds that it has a certain hæmatogenous function similar to that of the spleen, and is also an important regulator of the intracranial circulation; and Horseley believes its hæmatogenous function is the formation of red blood-corpuscles and that it also excretes mucin. Liebermeister and Guyon support Zesas in his conclusions in relation to the effect this gland produces on the blood-supply of the brain. This theory is also upheld by Simon, who acknowledges the probable intimate relation between the thyroid and the nutrition of the nervous system.

Lushka has advanced the idea of it being a mechanical bolster to keep pressure from the important structure of the neck, a theory, however, which has met with but little favor. English authorities seem to be well agreed that myxœdema, cretinism, and cachexia strumapriva are the same disease somewhat modified in each form and described under a different name. In view of the fact that in all three of these diseases, in exophthalmic goitre, and in the condition following thyroidectomy, nervous symptoms are so constantly and prominently present I believe the thyroid gland bears a relation of very high functional importance to the central nervous system, and also that it excretes into the interior of its vesicles a mucinoid material which is taken up by the lymphatics; a belief which is based on the presence of this substance in the acini of the gland and throughout the body in myxœdema, cachexia strumapriva, and the animals used for experiment. The theory that it is a regulator of the intra-cranial circulation is based on the anæmic appearance of the brains of patients and animals examined, and also on the decided mental failure attending the cases; while the claim that it has a hæmatogenous function which gives it the power of producing red blood-corpuscles has foundation only in the degenerated colored cells found in the vesicle, and the decreased number present in the blood of the diseased patients and vivisected animals. Much more

accurate and positive information will be needed before we can accept either of these functions as assured. The idea of it acting as a mechanical bolster is certainly very fanciful and somewhat disproved when we consider that pressure on the deeper structures of the neck is usually the cause for removal of the gland. That the thyroid has any connection with the spleen is confuted by experiments on rabbits by Tizzoni. He clearly demonstrated that splenectomy caused no changes of any kind in this organ. It appears well, therefore, in view of the present information obtainable in relation to this subject that we should never undertake the complete removal of this important organ unless it is absolutely necessary. In closing, I desire to express my regret at being unable to do more justice to a subject of such importance, but realize that I have already sufficiently encroached on your time.

Clinical Memorandum.

A REDUCING SUBSTANCE IN URINE RESEMBLING GLUCOSE.

BY T. BARTON BRUNE, M.D., OF BALTIMORE, MD.

A FEW days ago a specimen of urine was sent to the writer, the analysis of which revealed the presence of a substance likely to be of importance to Life Insurance Companies and of considerable interest to individuals applying for insurance. On the 13th of this month, the agent in this city, of one of the prominent New York Life Insurance companies sent me a sample of urine and the following account of it. It was passed by a young man of good physique, who had in the last three years gained fifteen pounds in weight and three inches in abdominal girth and also was in apparently perfect health, but had been repeatedly turned down, as a bad risk, by prominent medical examiners of other first-class companies because of the presence of glucose in his urine. As he had recently been examined by the medical staff of the agent's company and some doubt had been raised regarding the presence of glucose in his urine and as he wished a large insurance, the agent requested me to analyze the accompanying sample and communicate to him the result of the analysis. The analysis, made December 13, 14 and 15, was as follows:

ANALYSIS OF THE URINE.

Physical characteristics. Urine sparklingly clear, light amber in color, urinous smell, acid reaction, specific gravity 1022; amount for twenty-four hours said to be 32 ounces. No sediment when received. Applicant on ordinary mixed diet, having eaten nothing unusual and taken no medicine.

Normal Constituents. Indican and other normal ingredients of urine present in normal quantities, as determined approximatively. No bile pigment as determined by sulphuric acid and nitric acid containing little nitrous acid. No albumen.

Upon standing several hours (fourteen) a very slight, flocculent, whitish sediment appeared, and the supernatant fluid began to be discolored, a reddish yellow, later a brownish-red, from its surface down.

Heller's or Moore's Test. Upon the addition of a solution of *sodic hydrate* (1-3) the earthy phosphates were precipitated in considerable quantity and the supernatant fluid became a port wine red, later (after a few hours) almost black. This effect was hastened by *boiling*. *Nitric acid* in small quantity rather heightened the color, but in excess almost decolorized it without evolving any caramel odor. The sodic hydrate was proven free from lead salts, and the urine free from hydrogen sulphide. Probably from this reaction a considerable quantity of grape sugar was supposed by some examiners to have been present.

Bostger's Test. Upon the addition of *subnitrate* of *bismuth* and solution of *sodic hydrate* in the cold, a reaction took place in the supernatant fluid similar to that above, but the subnitrate was not abnormally discolored even upon *boiling*, becoming simply a very light brown.

Roberts's Modification of Fehling's Test. Upon boiling 4-5 c.c. of Fehling's Test Fluid, as recommended by Roberts, and adding 1-2 c.c. urine there first appeared a dark greenish discoloration rapidly followed by separation of a greenish-white sediment from a dark brown supernatant fluid. On standing an hour its sediment resolved itself into a greenish-white layer superimposed upon a mixed red and orange layer, a reaction resembling that of sugar.

Johnson's Picric Acid Test. Ten minims of *picric acid* solution gave, according to Johnson's method, a reaction similar to that produced by one and a half grains of glucose, and twenty minims a reaction such as would be caused by two grains per ounce of urine. In both cases, however, the discoloration ensued before as well as after boiling, and the resulting color was more brown and less red than that produced by glucose.

Fehling's Test. With *Fehling's* test a very unsatisfactory reaction ensued, for while a slight amount of cuprous oxide was precipitated, instead of decoloration of the supernatant fluid there resulted a deep brown discoloration similar to that produced by too long boiling of the fluid in Roberts's test.

Fermentation gave no result even after thirty-six hours.

Ultzmann's Saccharimeter. The *polariscope* showed upon repeated trials a lœvo-rotation of 0.2°, a rotation, although the opposite of that caused by glucose, too slight to be of value.

Thymol and *sulphuric acid* gave a light violet color.

Upon the addition of *silver nitrate*, a grayish-white precipitate resulted, which quickly blackened upon agitation.

Ferric chloride gave a faint green precipitation.

Nitric acid gave a light yellow instead of violet purple zone between its fluids.

Boiling gave a reddish purple clear fluid.

Galippe's Test. Picric acid gave the faintest possible white-cloudiness, which cleared upon boiling, and no abnormal darkening of the mixture.

The *microscope* revealed that the sediment consisted of mucus with urates and some irregular crystals, and a few pigmented granules.

CONCLUSION.

The presence of glucose indicated (shall I say to the non-specialists?) by the sodic-hydrate, copper, and, perhaps, picric acid and bismuth-subnitrate tests, is absolutely negatived by the polariscope, the fermentation, silver-nitrate and ferric-chloride tests, and a proper interpretation of the other tests. Clearly, the question as to the presence of glucose is answered in

the negative. As to the next question, What is the abnormal substance giving these reactions? I cannot answer without further analysis, but hope to supplement this by an account of its discovery. Whatever it is, it would seem to be in small quantity, and to have little if any pathological significance. The brownish discoloration of the urine from above downwards, and its reaction with sodic hydrate and its copper salts, would indicate a substance discovered in urine by Baedeker in 1861 and called "alkapton." This body is, however, probably a composite one, and its further reaction with ferric chloride and silver nitrate would point towards pyrocatechol or proto-cateclinic acid, (both of exceedingly rare occurrence in its human urine) as the possible cause of its behavior of the urine. The analysis, however, is not complete. Although such is the case, two important lessons may be drawn from this analysis: — The one is that the copper and sodic hydrate tests, as generally used, are not sufficient *positive* tests for glucose, but should be supplemented by the fermentation, subnitrate of bismuth and polariscope tests, or, in doubtful cases, by all three; the other is that medical examiners should not lightly tell applicants for insurance that they are suffering from serious illness. For this applicant was very much alarmed by a very prominent examiner in another city telling him he was in the last stages of diabetes and absolutely refusing to recommend him for insurance.

Reports of Societies.

QUARTERLY MEETING OF THE RHODE ISLAND MEDICAL SOCIETY.

A QUARTERLY meeting of the Rhode Island Medical Society was held in Providence, December 16, 1886, the President, DR. HORACE G. MILLER, in the chair.

Delegates to medical societies for the ensuing year were appointed as follows: Maine Medical Association, F. B. Fuller, C. V. Chapin; New Hampshire Medical Society, Eugene Kingman, G. T. Swarts; Vermont Medical Society, C. H. Leonard, L. S. Hill; Massachusetts Medical Society, J. H. Eldridge, H. R. Storer; Connecticut Medical Society, C. H. Fisher, F. T. Rogers; New York State Medical Society, J. W. Mitchell, J. W. C. Ely; New York State Medical Association, J. H. Morgan, Charles O'Leary; New Jersey Medical Society, F. H. Rankin, A. J. Browning.

DR. W. R. WHITE reported

A CASE OF INTESTINAL OBSTRUCTION IN AN INFANT CAUSED BY THE INGESTION OF WOOL.

The patient, a girl aged twelve months, had had no evacuation of the bowels for two and a half days, and during the last twenty-four hours had been very restless and uncomfortable, refusing to nurse, and evincing abdominal pain. To relieve her, the mother had given no medicine, but had tried enemata of warm water and molasses without avail. The last enema was followed by a severe convulsion of short duration. Dr. White gave two grains each of calomel and sugar. One dose was effectual, the child having within ten hours four copious and painless dejections, composed of normal fæcal matter, with which was mixed masses of wool-fibres to the amount of two handfuls. The mother recognized the nature of the foreign substance by numerous pink and blue fibres, which she then remembered to have seen the baby picking from the fleece of a soft woolen blanket on its crib.

DR. W. E. ANTHONY recalled a similar accident in the case of a child three years of age, who had no movement of the bowels for three days, and had received two ineffectual doses of castor oil, causing great pain. In attempting to introduce a syringe, he met an obstruction immediately above the sphincter ani, and with the only instrument available, a button-hook, he removed twenty-eight squash-seeds, which were found impacted in a solid mass.

DR. F. C. CLARK advised small doses of calomel for these intestinal obstructions of children. One or two grains frequently repeated yields more satisfactory results than the use of enemata.

DR. H. CANFIELD read a paper on

HEALTH RESORTS AT THE SOUTH, WITH REMARKS ON THE GENERAL SUBJECT OF CLIMATOLOGY.

The ideal locality for any class of invalids during the winter months does not exist, nor will any one locality ever be found fulfiling all requirements. Different places offer certain peculiar advantages from which the physician may choose for every individual invalid.

The sand region of the Carolinas is characterized by a climate moderately warm, with a marked diurnal variation, a moderately low relative humidity, again with a marked diurnal variation; an ordinary amount of sunshine, great purity of air, good provision for living, monotonous scenery, poor means of recreation, but easy accessibility. They answer as good half-way stations for the sick invalid in going South in the fall and returning in the spring, while the semi-invalid may prefer them for the whole winter.

The mountain region of the Carolinas possesses a slightly colder climate, with less diurnal variation, a relative humidity about equal to that of the sand belt, a greater amount of sunshine, greater purity and invigoration of air, fair provisions for living, the finest scenery, good means of recreation, and fair accessibility. This is the climate for those who do not object to a moderate degree of cold, and is probably the best for creating a healthful reaction in the diseased system.

The eastern coast of Florida is warm and moist, subject to sudden changes, both in temperature and humidity, has a fair amount of sunshine, good, and, for Florida, very bracing air, the best of provision for living, fair scenery, numerous resources for recreation, and easy accessibility. The semi-invalid, the lover of good society, the aged, will find here a most delightful locality for passing the winter months. The lake region of Florida is slightly warmer, much drier, has bright sunshine, a pure, easy-living air, fair provision for living, for Florida, varied scenery, fair means of recreation, and easy accessibility. The Gulf Coast is still warmer, with a greater relative humidity than the lake region, but less than that of the Eastern coast, plenty of sunshine, an easy-living, but poor recuperative air, no provision for living, fair scenery, numerous objects of diversion, and good accessibility.

For sicker invalids, the lake region is by far the best of all Florida; those who can "rough it" should not stop short of the Gulf Coast.

DR. CHARLES V. CHAPIN read a paper on

DISINFECTION AND DISINFECTANTS.

Steam at a pressure of twenty-five pounds, at which its temperature is 240° F., destroys the most resistant spore almost immediately. At lower temperatures it requires longer to act. Boiling water will kill microbes without spores almost instantly, and boiling for half an hour will destroy all disease-poisons.

Chloride of lime, or more properly, bleaching-powder, is best used in solution. Its value depends upon the chlorine it contains. The standard solution recommended by the Committee on Disinfectants of the American Public Health Association is four ounces to the gallon. For this purpose, the bleaching-powder should contain twenty-five-per cent. available chlorine. Labarraque's solution is practically the same thing, being a solution of hypochlorite of soda, but the strength of the preparations on the market is very variable, some of it being worthless.

Mercuric chloride in the strength of 1–1000 destroys all spores within two hours, and it is an efficient antiseptic in the strength of 1–15000. The poisonous character of this salt interferes with its indiscriminate use. It should not be used in lead pipes or in a pan water-closet. The standard solution of the American Public Health Association is two ounces to the gallon. This for safety had best be colored, which may be done by the addition of one pound of sulphate of copper, another disinfectant of considerable value. Mercuric chloride coagulates albumen, and as disease germs are often contained in albuminous material, the action of the disinfectant is thus frequently interfered with.

Dry heat requires that the article to be disinfected should be for two hours exposed in an oven at 300° F., a temperature which injures woolens. Moreover, unless the articles are freely opened, the heat will not penetrate to their interior.

The fumes of burning sulphur, sulphurous acid gas, when present in one per cent. of volume, destroy in a few hours certain disease poisons, but does not, even in much larger proportion, kill the spore-producing microbes. This gas is easily generated, and, within certain limitations, is a valuable and almost indispensable disinfectant. Three pounds of sulphur should be burned for every 1000 feet of cubic air space of the room to be fumigated.

Carbolic acid, even in saturated solution, does not destroy spores, but in two per cent. solution it will in two hours kill microbes without spores. Thus it is seen that the vapor of carbolic acid can have no value whatever as a disinfectant.

The salts of zinc, the suphate and chloride, are not disinfectants at all, but are often useful as antiseptics or deodorizers. The same can be said of the sulphate of iron.

Hydrochloric acid is a valuable disinfectant in the strength of 1 to 50, and is a good antiseptic in the strength of 1 to 1700. It deserves to be used much more than it is at present.

In the present state of our knowledge, it is impossible to name a single disinfectant which can be given internally in sufficient quantity to kill the disease virus or even to suspend its activity without killing the patient. All we can attempt to do is to destroy or hinder the growth of disease poisons outside of the body. We can disinfect the room and the air it contains, the clothing and bedding, the drains, vaults and cesspools, and even food and drink, but we cannot disinfect the alimentary canal or the blood, neither can we put antiseptics into them with safety. The prevention of infection is better than disinfection. Isolate the patient; expose as few articles as possible to the contagion; remove filth and repair the drains rather than rely on the use of disinfectants and deodorants.

DR. GOLDSMITH, while admitting the utility of sulphurous acid gas in fumigating small rooms, pointed out the special value of chlorine in the case of hospital wards.

DR. GREENE inquired as to the disinfectant value of coal tar. He had used it successfully in case of foul soil-pipes.

DR. CHAPIN said that coal tar is a complex chemical substance, and some of its elements may have some power as disinfectants. Coal tar, like carbolic acid, has feeble disinfectant power, but is something of a deodorant. The best way to clean out pipes is to pour down a boiling solution of caustic potash, followed by free use of clear water.

DR. SWARTS asked whether there were any statistics of acknowledged value concerning the relative merit of the various disinfectants.

DR. CHAPIN replied that it is very difficult to get accurate facts about the value of special disinfectants. Health officers in most large cities use the sulphur fumes for fumigating.

DR. LEONARD called attention to *aqua ammonia* spray as a good measure, in addition to full ventilation, to free the room of sulphurous gas after fumigation, but the pungent fumes would still be troublesome to sensitive lungs for some hours.

DR. F. P. CAPRON reported two cases of

MASTOID DISEASE

which recovered.

DR. E. T. CASWELL exhibited a

DERMOID CYST OF THE OVARY,

which he removed from a woman fifty years of age. The patient made a good recovery after a protracted convalescence of six weeks, during which she suffered from obstinate vomiting requiring rectal alimentation.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

E. M. BUCKINGHAM, M.D., SECRETARY.

DECEMBER 13th, 1886.

The PRESIDENT, DR. F. W. DRAPER, in the chair.

VACCINATION COMPLICATED BY A TRIVIAL WOUND.

DR. J. B. AYER who reported the case had vaccinated on the arm, a healthy eight months' child with bovine matter. The following day, while crawling on the floor, he got a small wooden splinter in his leg just below the knee, which was soon removed.

On the eighth day vaccination had taken perfectly in both places with less than the ordinary amount of irritation and without eruption elsewhere upon the body.

The mother called attention to the leg, but there was nothing visible except a minute abrasion which did not appear to be inflamed. He was called, however, five days later and found phlegmonous inflammation about the abraded spot. In a few days it was

lanced, evacuating a large amount of pus, but no bit of retained splintered wood was found in the wound, as had been expected. Inflammation extended downward and a second abscess formed above the ankle. This was lanced and recovery followed at the end of a month.

This case showed that trifling local irritation could be the source of much trouble in the course of vaccinia, notwithstanding the fact that the child was healthy, and the vaccine matter excellent.

DR. H. I. BOWDITCH suggested that vaccination and the slight wound might be mere coincidences; and that the splinter could have had the same effect even if the child had not been vaccinated.

SUBCUTANEOUS ŒDEMA, OR ASCITES TREATED BY PROLONGED DRAINAGE THROUGH FINE CANULÆ.

DR. W. C. B. FIFIELD showed an instrument, the invention of Dr. Southey, of London, consisting of a fine trocar with canula, this last having evenly rounded projecting shoulders. There was also a fine rubber drainage tube. The trocar with a canula was thrust through the side of the tube and then obliquely through the skin, or directly into the abdominal cavity. Next the trocar was withdrawn, and lastly the projecting shoulder of the canula was pushed directly into the tube. A number of canulæ accompanied the trocar.

This he had used fourteen days ago in a case of cirrhosis of the liver, where the patient was unable to lie down because of œdema, the swelling of the scrotum in particular being such that the penis was lost to sight. These canulæ had been left in for days without causing inflammation. Some nine quarts of fluid had been evacuated with great relief to the patient and without wetting the bed, the fluid being carried off by the tube. Dr. Southey had used the same instrument in ascites, passing the trocar into the abdominal cavity and leaving in the canulæ. The only objection to this instrument seems to be that rubber, and especially foreign rubber, spoils in no long time. The ordinary tapping the skin with needles is objectionable, in that it wets the bed and clothing, causing irritation of the skin.

DR. FRANCIS MINOT said that he had seen a similar instrument used in the peritoneum for ascites in his wards of the Massachusetts General Hospital just before beginning his own service. He thought that the skin might be punctured in œdema more often than is done. A patient that he had seen in consultation had been drained from September until her death in May or June from punctures in the ankle and with great relief. Fluid ran off rapidly when she was sitting up, but generally not so well when in bed. Puncture gave complete relief to dyspnœa.

DR. FIFIELD said that tubes so small as in his instrument could not, he thought, be got in this country.

DR. C. M. GREEN read a paper on

THE TREATMENT OF PROLAPSE OF THE UTERUS AND VAGINA, ESPECIALLY IN THE AGED, WITH ILLUSTRATIVE CASES.[1]

DR. W. H. BAKER expressed himself as strongly in favor of operative treatment in proper cases. The operation gives permanent relief. He had performed it a great many times and had seen the displacement recur in one case only. He wished to emphasize as a reason for operating, the fact that many of these patients are careless. The same woman who at thirty or forty or fifty will take very good care of herself, will at sixty or seventy or eighty become neglectful, and this habit of neglect is a reason for not trusting to pessaries in advanced life. He showed a soft rubber ball which he had many years before removed from a woman who was supposed to have cancer; but who had really this ball cracked open, and filled with foul discharge, she having worn it for three years. It had been removed with difficulty, and simply illustrates what he had been saying. In speaking of muscular effort as a cause, he mentioned a woman who had caused this prolapse by lifting the end of a piano, and he had twice known a less severe effort to have a similar result.

It is true that in the poorer classes this prolapse is more often marked than among the wealthy, for the reason that it is more often neglected; but this neglect is in part at least, due to a difference in nerve tolerance. Women of the lower class appear at the dispensary and say that the womb is down. It annoys them because they have to support it with a napkin, but it causes no pain; while women of the educated class will suffer from the same lesions. In other words, the educated woman has less nerve tolerance than the uneducated, and we have no right to assume that there is not pain in the cultivated, because we may have seen the same condition borne without complaint by a dispensary patient. The higher the education, the less the nerve tolerance.

In regard to operation, it may be proper in the very aged to close the vagina to the size of the finger or less for the purpose of ensuring a permanent result, but we cannot do so in younger women. Yet we see women at thirty or forty with this prolapse, and in them the speaker prefers to make the narrowest part of the passage very high up. It may be made nearly as high as the cervix.

Dr. Baker also spoke of the different methods of operating. That of Emmet, in which but a narrow surface is denuded, depends for success upon the holding of all the stitches and we do not get so much strength as if more is cut away. He prefers to draw the walls together experimentally with hooks and to mark the place where the utmost amount of coaptation can be secured, allowing for swelling after the operation. If the entire thickness of the mucous membrane is cut away the adhesions will be firmer. In order to do this safely, the bladder must be pushed up out of the way. He uses silver sutures and leaves them in for two or three weeks.

DR. FIFIELD related two cases in which permanent good appeared to be done by electricity.

[1] See page 615 of the Journal.

— A writer in the *New York Medical Monthly* reports an operation of circumcision in a patient over ninety years of age, suffering from the effects of an elongated prepuce, which, as the author says, should have been removed just ninety years and ten days before it actually was. The somewhat belated operation was performed successfully without ether, cocaine being injected into the preputial fold, and the aged patient beguiled the time for his surgeon by telling stories throughout the operation. The healing was rapid, and the gentleman is now provided with a serviceable organ.

THE BOSTON

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ANNUS MEDICUS, MDCCCLXXXVI.

WITH the closing number of another year it becomes the duty of the JOURNAL, in accordance with its custom in the past, to gather up a few of the threads of the medical history of the year.

The Pasteur movement has by no means ceased during the year. A Pasteur Institute was founded in New York early in January. Dr. Pasteur (as he is now, having been given the degree this year, *honoris causa*) received a grant from his government of a location for his hospital for thirty years, but on his objecting that this was too ephemeral a lease for the character of the buildings contemplated, it was extended to ninety-nine years. Among his sharpest critics have been Frisch, of Vienna, and Professor Colin, of the Veterinary School at Alfort, France. On the other hand, we learn from the statement of the President of the Local Government Board of England made to Parliament, August 26th, that the British Hydrophobia Commission, under Dr. Victor Horseley, appointed to investigate Pasteur's methods, though not ready to make a formal report, were substantially satisfied of the effectiveness of the treatment. The report made by Pasteur to the Academy in the fall was naturally the occasion of a sharp discussion. The details of his communication have already been laid before our readers. Up to October 31st he had inoculated 2,490 persons, of whom 1,700 were French. Out of the latter number ten had died. The mortality among the foreigners was much larger. Among wolf-bitten Russians, at any rate, his inoculations have evidently not been successful. According to the figures which we allow for the cases in which the biting dogs were not really rabid, and again for the cases in which even a bite from a rabid dog produces no hydrophobia, will be our confidence in the life-saving power of Pasteur's inoculations.

Our English brethren have been much exercised during the year over the subject of "direct representation" in the General Medical Council. This body, constituted by Parliament in 1858, has hitherto consisted solely of appointees of the Crown, and of the great licensing corporations. Its chief function has been the registering of medical practitioners. Last summer Parliament voted that the latter class of persons should be entitled to elect five out of the thirty members of Council, and, during the last two months, the ballot has been cast for three representatives from England, one from Scotland, and one from Ireland. From a total registration of 18,074, 13,381 votes were cast, showing the wide interest taken in the matter. Among the successful candidates was Mr. Wheelhouse, a Leeds surgeon, who has held important offices in the London College of Surgeons. Except in his case and that of Dr. Kidd of Dublin, the Irish representative, who is a member of the Council of the College of Surgeons, and an ex-president of that body, the "general practitioners," distinct from all licensing bodies, to whom it was the special aim of this act to permit representation on the Council, are considered to be well represented. The other members chosen are Dr. Glover, one of the editors of the *Lancet*, Sir Walter Foster, and Dr. Bruce of Scotland. Among those already in the Council are Sir Henry Ackand, Professor of Medicine at Oxford, President of the Board, Matthews Duncan, Richard Quain, and others more or less well known on this side of the water.

Medical education has had several windfalls during the year by legacy, though we regret to say that the medical institutions of New England have not been so fortunate as some others. The late William H. Vanderbilt left $500,000 to the College of Physicians and Surgeons in New York. This was supplemented by another fund of $250,000, contributed by three of his sons for a "Vanderbilt Clinic" in connection with that institution, and by a nearly equal sum from his daughter, Mrs. Sloane, for a maternity hospital. Thus the benefactions of the Vanderbilt family to this college of medicine have amounted to nearly $1,000,000. Mrs. Woerishoffer gave to the New York Academy of Medicine $25,000 in memory of her husband. By the death of Lady Wilson, the Royal College of Physicians of England gets about £200,000 from the estate of the late Sir Erasmus Wilson.

Among the prominent national society meetings for the year were the following: The Seventh Annual Meeting of the American Surgical Association was held in Washington, April 28th to May 1st. The Thirty-Seventh Annual Meeting of the American Medical Association was held at St. Louis, May 4th–7th. The Third Annual Meeting of the American Climatological Association was held in Philadelphia, May 10th and 11th. The Eighth Annual Meeting of the American Laryngological Association was held in Philadelphia, May 27th and 29th. The First Meeting of the New Association of American Physicians was held in Washington, June 17th and 18th. The American Otological Society held its Nineteenth Annual Meeting at New London, July 20th, which was followed, immediately, July 21st and 22d, by the Twenty-Second Annual Meeting of the American Ophthalmolog-

ical Society. The American Neurological Association held its Annual Meeting July 21st–23d at Long Branch, N. J. The Fifty-Fourth Annual Meeting of the British Medical Association was held at Brighton, August 10th–13th. The American Dermatological Association held its Tenth Annual Meeting at Greenwich, Conn., August 25th–27th. The American Gynæcological Society held its Eleventh Annual Meeting at Baltimore, September 21st–23d. The Fourteenth Annual Meeting of the American Public Health Association, with a conference of State and Provincial Boards of Health was held at Toronto, October 4th–7th. The American Academy of Medicine held its annual session at Pittsburgh, October 12th–13th.

The Assembly of German Physicians and Naturalists met at Berlin in September. The French Congress of Surgery met in Paris, from October 18th to October 24th, and discussed chiefly tetanus, nephrotomy and nephrectomy, orthopædic resections, and operative intervention in irreducible traumatic dislocations. The International Congress of Hygiene which met at the Hague in 1884, was appointed to meet this year in Vienna, but for some unexplained reason did not assemble, and the meeting is now announced for next year. The International Congress for Climatology and Hydrology met at Biarritz, October 1st.

A movement was originated by the American Surgical Association in the direction of the formation of a Congress of American Physicians and Surgeons, which should be a more representative body than any existing organization of the best work of the profession in this country. Committees were appointed from the various societies which were invited to join in this congress, namely, the American Surgical, Climatological, Laryngological, Neurological, Otological, Ophthalmological, Dermatological and Gynæcological Associations, and the Association of American Physicians. These committees met at Washington in September and, though there was a strong spirit manifested by most of the delegates towards preserving the absolute autonomy of each society in all matters concerning its meetings, it was voted to hold a conjoint meeting of the Societies in Washington every three years, beginning in September, 1889, such meeting to occupy two evening sessions, at one of which there should be an address and at the other a topic for discussion.

Meantime, what of the prospects for an *International* Medical Congress in this country in 1887? The death of the lamented Dr. Austin Flint left a vacancy in the presidency of the Congress which Dr. N. S. Davis, of Chicago, has been selected to fill. The Executive Committee have also filled up other vacancies in the general offices of the Congress and of the respective Sections, caused by the resignations of men who did not endorse the methods of the Congress. Those objectors have with scarcely an exception adhered to their resolution to stay out. For this reason, as well as in accordance with the "territorial policy" of the management, the cities of the Atlantic Coast will have but a small representation in the honors of the Congress. The principle of territorial representation has been carried to a considerable length, but has not yet had its perfect work. Texas and Oregon are fairly provided for, but Alaska, which in accordance with this principle of appointments, is entitled to nearly a third of the offices, has thus far been treated very shabbily. A few more Sections will have to be added to the eighteen already announced, if all our great country is to be adequately represented. We learn that Dr. Pancoast, of Philadelphia, has personally invited the Queen of England to be present. Should she come (and how can she do otherwise?) it will be a great time for the bird of freedom. It is proposed to ask Congress to furnish a little pap.

Among the general educational interests of the year which especially deserve mention in this connection, was the Heidelberg festival, held last summer in commemoration of the 500th anniversary of the foundation of that seat of learning. Our own younger university, Harvard, attained this year the completion of her first quarter millennium, and this occasion was celebrated at Cambridge with festivities whose recollection is not only fresh in our readers' minds to-day, but will remain equally distinct for many a year to come. Nor should we omit to add a word of the distinguished part borne by our own poet on that occasion, who had but just returned to us crowned with the highest academic honors of Oxford, Cambridge, and Edinburgh.

The epidemiology of the year is of interest. Fortunately, in this country, we have escaped any considerable infection by any of the devastating epidemic diseases. At the beginning of the year cholera was still lingering in Spain, causing considerable havoc in certain towns — in Alcante, Murcia and Granada. In February it sharply attacked Tarifa, the southernmost town of Spain, where, of a population of 3000, fifty were struck down in one day. From this time it gradually diminished in Spain. Passing over France, it took a general easterly course, being present through the summer in Italy, but without causing the same alarm that prevailed in the previous year, and towards autumn and early winter attacking Hungary, the southern Austrian provinces and the Turkish frontier. In Italy, cholera appeared at Brindisi in the middle of April, with only moderate severity.

A number of local epidemics occurred. Quarantine, or as it has become the fashion to call it since the Roman Sanitary Conference, "observation," was maintained by all Mediterranean ports against Italy. The reliance of that country on quarantine was shown to be weakening by a unanimous protest of the Chamber of Commerce of Venice against all quarantine restrictions, in which protest they were, for the first time, supported by some influential papers in Rome and other cities.

In Venice, during the spring, it was asserted, though denied by the authorities, that occasional cases of cholera had appeared, but an official bulletin was required by May to allay the growing uneasiness by

an exact statement of the number of cases. Regular bulletins appeared after that. With the occurrence of warmer weather at the end of May, the cases in Venice decidedly increased, there being eighty-five deaths in the last week of that month, and one hundred and twenty-one for the first week of June. Though the disease appeared with spasmodic virulence in scattered parts of the country, the provinces of Venetia and Brindisi continued to bear the brunt of it.

In September a number of cases of cholera appeared in Buda-Pesth, as well as at Trieste and several other towns of Istria. Early in October it was officially announced that the epidemic of cholera had ceased at Venice, though scattered cases were reported from other Italian towns, and a few at Rome. At Pesth the deaths were averaging six a day and were on the increase. In the latter part of October a case occurred in Vienna; Austrian and Turkish Croatia were then involved. An outbreak occurred among the garrison at Belgrade, where, between November 21st and 27th, there were fifty cases and ten deaths.

The history of cholera in Japan during the first half of the present year gave a total of 10,276 cases, with 7,803 deaths, about 75 per cent. of *reported* cases, at least. During the summer the mortality continued to be large in Yokohama and Tokio, as well as in Corea. The mortality in the latter island has been frightful. Early in the fall the deaths at Seoul, the capital of Corea, numbered 1000 per day, and there were no means of burying the bodies.

In South America, cholera has established itself since November, in the Province of Buenos Ayres of the Argentine Republic. Several towns report from twenty to thirty new cases daily, and the city of Buenos Ayres is reporting from thirty to forty cases daily, with a mortality of 60 to 70 per cent. The large Italian immigration is undoubtedly responsible for the introduction of the disease, which will probably be heard of next in Brazil.

The Local Government Board of England, which during the first of the year had laid a prohibition on the importation of rags from Spain, extended that prohibition, on April 1st, for four months, and the Board of Supervision also extended the prohibition in Scotland till August 26th. No further extension of this restriction was made, the cholera having ceased in Spain, but on July 3d, the Board prohibited the bringing of rags from Italy between that date and November 1st. This latter prohibition was later extended till April 1st, 1887, and during the autumn a similar prohibition was placed on the bringing of rags into England from Austria-Hungary, this restriction also to remain in force until April 1st, 1887.

Yellow fever prevailed during the first half of the year on the northern shores of South America and in Central America, being at times quite severe in Rio de Janeiro, Bahia, Pernambuco, Guiana, as well as among the British residents of Venezuela and the workmen of the Panama canal. The epidemic in Brazil has served to call renewed attention to the matter of Dr. Freire's inoculation for yellow fever with the *cryptococcus xanthogenicus*. These inoculations have been practised upon a large number of persons, and their protective effect is still *sub-judice*. Dr. Holt, of Louisiana, has asked that a commission be sent to Brazil and also Mexico by the United States government to investigate the subject. Assurance has been given that, should such a commission go out, the fullest opportunity will be granted by Dr. Freire for studying his methods and their results. It is certainly of great importance that the truth in this matter be sifted, though it is but fair to say that bacteriologists look askance at the claim, and are prepared to see it relegated to the same limbo as that of Ferrán.

A Norwegian vessel from Aspinwall brought six cases of yellow fever into New Orleans in August, but prompt sanitary measures were taken and the disease did not extend. An epidemic, which led to a heated discussion among local sanitarians and clinicians, occurred at Biloxi, Mississippi, a small town on the gulf coast. It began in August with two or three deaths. An investigation by the Louisiana Health Board made it appear to be yellow fever, and the place was quarantined. The local physicians denied this diagnosis, and called in a surgeon of the United States Marine Hospital Service, who supported their views. The quarantine was then raised, amid maledictions from the citizens that it had been imposed. The disease continued in moderate severity till fifty cases, with fifteen or twenty deaths occurred, and the quarantine was again imposed by the Louisiana Board. The disease finally ceased, and the controversy as to its nature remains unsettled.

Massachusetts has during the year, by a righteous divorce of an unnatural alliance, regained once more a separate State Board of Health. The act was recommended by Governor Robinson in his annual message in January, and passed through both legislative houses, safely evading all the snares of the adversary. On May 19th, the governor sent in the names of seven gentlemen to constitute this Board. They were at once confirmed and have since then exercised the functions which had for the last seven years been in a state of more or less desuetude, —"innocuous desuetude," we fear it can hardly be called.

On March 24th, the corner-stone of the conjoint Examination Hall of the corporations of the Royal Colleges of Physicians and of Surgeons on the Thames embankment, was laid by Queen Victoria with great ceremony and in the presence of a very distinguished company. The new building is to be a most spacious and elegant one, one hundred and fifty feet square and five stories in height, with every requirement for technical work.

Among the regular, endowed medical lecture courses of the year in England and this country we note the following:—

The Erasmus Wilson Lectures on "Evolution in Pathology" were delivered before the Royal College of Surgeons of England, by J. Bland Sutton, F.R.C.S.;

the Gulstonian Lectures on "Spasm in Chronic Nerve Disease" were delivered before the Royal College of Physicians, by Seymour J. Sharkey, M.B., F.R.C.P.; the Croonian Lectures on "Some Points in the Pathology of Rheumatism, Gout, and Diabetes" were delivered before the Royal College of Physicians, by P. W. Latham, M.A., M.D., F.R.C.P.; the Lumleian Lectures were on the "Electrical Conditions of the Human Body" and were given by William H. Stone, M.D., M.R.C.P.; the Cartwright Lectures were delivered before the Association of the Alumni of the College of Physicians and Surgeons of New York, beginning March 23d, by William Osler, M.D., Professor of Clinical Medicine in the University of Pennsylvania; the Ingleby Lectures on "Some Functional Disorders of Females" were delivered at Queen's College, Birmingham, by Willoughby Francis Wade, F.R.C.P.; the Bowman Lecture was delivered before the Ophthalmological Society of the United Kingdom, by Wilhelm von Zehender, Professor of Ophthalmology in the University of Rostock, and was on the subject of "Parasitic Diseases of the Eye."

The year 1886, which has made such signal havoc in the higher ranks of political life — in the death of the vice-president of the United States, of an ex-president and of three prominent candidates for that high office, as well as of the late unsuccessful candidate for the vice-presidency — has not spared the medical profession, some of whose brightest lights have gone out. Among the most widely-known persons who have died, we mention a few:—

John C. Draper, M.D., LL.D., died the last of December, 1885, of pneumonia, at the age of fifty. He was for thirteen years analytical chemist in the New York University. In 1860 he was appointed Professor of Chemistry in the Cooper Institute but relinquished the position after two or three years to become a surgeon in the army. He was the author of several chemical text-books as well as of a work on Medical Physics. He was son of Prof. John W. Draper and brother of Dr. Henry Draper.

Dr. Amédie Dechambre, of Paris, editor of the *Gazette Hebomadaire*, and one of the oldest medical editors of France, died early in the year.

Dr. Jules Guérin, one of the oldest French physicians, founder of the *Gazette Médicale* of Paris, a vigorous participator in the debates of the Academy of Medicine, and a very voluminous writer, died January 25th, at the age of eighty-six.

Alfred C. Post, M.D., LL.D., one of the oldest and most distinguished surgeons of New York city, died February 7th at the age of eighty-one, having been in continuous surgical practice for fifty-seven years, and continuing it up to within a week of his death. He had been surgeon to the New York Hospital, and more recently to the St. Luke's and Presbyterian Hospitals. He was one of the founders of the Medical Department of the University of the city of New York and was at the time of his death President of the Faculty and Emeritus Professor of Clinical Surgery in that institution. He had been connected with many of the chief medical societies of this and other countries.

John Cooper Forster, M.B., F.R.C.S., died March 2d, at the age of sixty-two. He had retired from professional work a few months previously, leaving the highest position in his profession, namely, the Presidency of the Royal College of Surgeons of England. Having been the assistant surgeon to Guy's Hospital until the retirement of Mr. Hilton in 1870, he was that year made surgeon to the hospital. He performed the first gastrotomy in England in 1857, upon a patient with cancer of the œsophagus, and was one of the earliest to try the Listerian method, although he afterwards abandoned the system in its details. He furnished many valuable articles in the Guy's Hospital Reports and was the author of a book on the Surgical Diseases of Children.

Dr. Gaspar Griswold, M.D., F.R.C.S., a graduate at Bellevue Hospital, demonstrator of anatomy at Bellevue and a professional associate with Dr. Fordyce Barker, died suddenly March 4th, at the age of twenty-nine.

Samuel Oakley Vander Poel, M.D., LL.D., of New York, surgeon-general of New York State during the war, where his duties were most responsible and arduous, Health officer of the port of New York from 1872–1880, professor of Theory and Practice in the Albany Medical College and of Public Hygiene in the Medical Department of the University of New York, died March 12, at the age of sixty-two. He had been president of the New York State Medical Society and a member of the International Medical Congress at Copenhagen in 1884.

Austin Flint, M.D., LL.D., of New York, died March 13th, at the age of seventy-four. Little need be said to remind our readers of the results accomplished by the ability and industry of this eminent physician. His works on Phthisis, on Auscultation and Percussion and his classical Principles and Practice of Medicine are in the libraries of most of the physicians who use the English tongue. He had been invited to deliver the address in Medicine before the British Medical Association, and though the address had fortunately been prepared and has since been published, the honor of appearing in behalf of American Medicine on that occasion was transferred to Dr. Billings. Dr. Flint was, as is well known, the president elect of the International Medical Congress of 1887.

Dr. Santesson, of Stockholm, a famous anatomist and surgeon and professor emeritus in the University, died at the age of sixty-four.

Dr. Bochefontaine, chief of the Laboratory of the Faculty of Medicine of Paris, died in the spring. He was an active opponent of Pasteur and Koch and showed his faith by his works, in swallowing a dose of cholera bacilli last year.

Legrand du Saulle, physician to the Salpêtrière, and author of a number of monographs on Toxicology and Forensic medicine, died May 6th, at the age of fifty-five.

Walter Moxon, M.D., F.R.C.P., one of the most prominent English pathologists, died suddenly July 21st, at the age of fifty. He showed wonderful promise while a student at Guy's Hospital, taking many prizes, and at his graduation, honors in every subject. He began his teaching career as Demonstrator of Anatomy in the Medical School of Guy's, and five years later succeeded Dr. Wilks in the pathological department. After several years' work in this department he was appointed to the joint lectureship on medicine. Many of his most important productions are published in the Guy's Hospital reports and include a wide range of important subjects, all of which are treated with the precision of expression and definiteness of knowledge which characterized his earlier anatomical work.

Alfred S. Purdy, A.M., M.D., an old practitioner of New York, died July 23d, in the seventy-ninth year of his age, and the fifty-sixth of his practice.

Frank Hastings Hamilton, M.D., LL.D., died in New York, August 11th, at the age of seventy-three. In conjunction with Dr. Austin Flint he bore an important part in the establishment of the Medical Department of the University of Buffalo. Removing to New York in 1862 he became professor of surgery at the Bellevue Hospital Medical College, which position he held for thirteen years. He remained surgeon to this hospital to the time of his death. During the War of the Rebellion he served in the army and became medical inspector. He was one of the consultants in the case of President Garfield. His monumental work on "Fractures and Dislocations" passed through several editions and was translated into more than one European language. Besides this he wrote text-books on other subjects, including one on military surgery and another on general surgery. The death of Gross, Post and Hamilton, within a year of each other leaves a void in the ranks of American surgery, hard to be filled.

Charles Chadwick, M.D., F.R.C.P., formerly President of the British Medical Association, and always prominent in its counsels, a leading physician of Leeds and connected with the hospitals and the medical school of that city, died suddenly August 30th, of acetonæmia, at the age of seventy-one.

James Goodchild Wakley, M.D., M.R.C.S., editor of the *London Lancet*, and son of the founder of that journal, died August 30th, of epithelioma of the tongue, at the age of sixty. His official position naturally made him known in matters of public medicine, and he was a most constant and generous helper of all worthy objects of benevolence. He played an important part in the foundation of the Hospital Fund to which he twice gave the sum of £1,000. He left on record a strong testimony of his faith in the Christian religion, and in the hearts of the poor of the great metropolis a lasting remembrance of his practical applications of those principles. It may be remarked, in this connection, that the Hospital Saturday and Sunday Funds in London, amounted this year to the unprecedented sum of $200,000.

Dr. Bernard von Gudden, perhaps the most distinguished alienist of the day, and director of the Munich Insane Asylum, was killed by the insane King Ludwig, of Bavaria, upon whom he was in attendance. He was sixty-two years of age. It is said that he had on hand more than a hundred brains, to which he intended to devote his careful study with the hope of elucidating certain questions in cerebral pathology.

Dr. Hermann Maas, professor of surgery in Würzburg died at the age of forty-four.

Joseph Samson Gamgee, M.R.C.S., a well-known surgeon of Birmingham, England, died September 18th, in his fifty-ninth year. He was a popular and successful teacher of clinical surgery in Queen's College, and a valued member of the staff of Queen's Hospital, besides being the author of many publications and the inventor of several surgical appliances.

Dr. Wm. Henry Dudley, President of the Collegiate Department of the Long Island College Hospital, died in Brooklyn, October 8th, at the age of seventy-five. He was one of the chief founders of the Long Island College Hospital in 1859, and has ever since contributed liberally in money and exertion to its successful development He was also a physician to St. John's Hospital.

Frederick John Farre, M.D., F.R.C.P., and Arthur Wynn Williams, F.R.C.P., the one Senior Physician to St. Bartholomew's Hospital, and the other Consulting Physician to the Samaritan Free Hospital, died in November, at the ages respectively of eighty-two and sixty-seven.

Paul Bert, eminent as a physiologist, died November 13th, at the age of sixty-three, from dysentery, at Tonquin, where he had resided as President General since April last. His earlier and more peaceful triumphs were at the Faculty of Sciences at Bordeaux, and at the Sorbonne, Paris, where he collaborated with and afterwards succeeded Claude Bernard. Under Gambetta in 1881, he was made minister of Public Instruction. His later years were much given up to political contests, in which he was a hard fighter.

John P. Gray, M.D., LL.D., superintendent of the State Lunatic Asylum, at Utica, New York, died November 29, 1886, at the age of sixty-one. He served as assistant physician in that institution from 1851 till 1854, when at the age of 28 he was made its medical superintendent. In the same year he began to edit the *American Journal of Insanity*. Beside this work he wrote many monographs and made many addresses, among them one before the State Medical society, in 1871, relative to the "Dependence of Insanity on Physical Disease;" and in 1873, before the American association of medical superintendents of hospitals for the insane, an address on the "Pathology of Insanity." Appointed in 1864 professor of psychological medicine and medical jurisprudence in Bellevue Medical College, he gave a course of lectures that impressed the students and faculty, and drew in auditors from the outside; a discourse giving a "General View of Insanity," was published, and serves to show the

breadth and thoroughness of the discussion. The State Medical Society summoned him again to speak before it, in 1884, when he presented "Thoughts on the Causation of Insanity." The Albany Medical College in 1876, appointed him its professor of pyschological medicine, and there as well as at Bellevue, he continued his lectures, until 1882. Other productions which have been published, are: "Mental Hygiene," delivered in 1876 in Philadelphia before the International Medical Congress (of which he was president of the psychological section;) "Pathological Researches," 1877; "Abstract of the laws of New York relative to Insanity," before the association of medical editors, 1878; an elaborate discourse on "Suicide," delivered at Bellevue Hospital Medical College, 1878; "Hyoscyamia in Insanity," before the medical society of New York, 1880. His address on "Heredity" in 1884, delivered as president of the American Association of Superintendents in Philadelphia, exhibits his vigor of thought and force of style in their excellence. Elected again as president of the State Medical Society, his address in 1885 treated in a very liberal spirit of the "Relations of the State to medical science." A lecture, on "Insanity and some of its preventable causes," delivered before the Utica Mechanics' Association in 1885, while popular was full of sense and science. He was shot in 1882 by an insane man and never recovered from the nervous shock of the wound which finally led to his untimely death.

Dr. Marcovici, Professor of Clinical Medicine and Dermatology in the Faculty of Medicine of Bucharest, died at the age of fifty. He achieved considerable distinction as interne at the Bicêtre, and on returning to his country, made some useful contributions to medical literature. He had taken an important part in several medical congresses.

Dr. Norman Chevers, C.I.E., whose death occurred on December 2d, was Secretary to the Medical Board at Calcutta, and subsequently became principal and first physician, and professor of medicine of the medical college of that place, where he lived for about quarter of a century. He was a member of the Medical Committee appointed by the Secretary of State for India to inquire into Professor Koch's discovery in connection with the prevalence of cholera.

NECROLOGY OF THE MASSACHUSETTS MEDICAL SOCIETY FOR 1886.

We include three deaths which occurred at the end of last year, too late to be included in our necrology for 1885:

Alfred Wood, M.D., of Taunton, died December 28, 1885, aged eighty-nine.

Nathan Pike Brownell, M.D., died in South Scituate, December 29, 1885, aged sixty.

Rufus Woodward, M.D., died in Worcester, December 30, 1885, aged sixty-six years.

James Henry Whittemore, M.D., died in Boston, January 6, 1886, aged forty-six.

Ebenezer Coolidge Richardson, M.D., of Ware, died January 10, 1886, aged sixty-five.

William Henry Haston Shepard, M.D., died at Westminster, February 7, 1886, aged forty-four.

David Fogg Drew, M.D., died at Lynn, February 13, 1886, aged sixty-six.

Joseph Haven Smith, M.D., died at Lowell, February 25, 1886, aged eighty.

John McLean Hayward, M.D., died at Wayland, March 9, 1886, aged forty-eight.

Austin Flint, M.D., Honorary M.M.S.S., died in New York, N. Y., March 13, 1886, aged seventy-three.

Clinton Joseph Ricker, M.D., died at Chatham, Mass., March 15, 1886, aged thirty-nine.

Robert Mendum Otis, M.D., died at Roslindale, March 19, 1886, aged forty-two.

Levi Goodenough, M.D., died at South Sudbury, April 3, 1886, aged eighty-two.

George Amory Bethune, M.D., died in Boston, April 5, 1886, aged seventy-three.

Anderson Dana Dyer, M.D., died at Brandon, Vt., April 12, 1886, aged twenty-seven.

George Washington Pierce, M.D., died at Leominster, May 1, 1886, aged sixty-six.

David Parker, M.D., died at Gardner, May 8, 1886, aged eighty-four.

Horatio Gilead Morse, M.D., died at Roxbury, May 12, 1886, aged sixty-nine.

Eugene Stephen Yates, M.D., died in Lawrence, July 28, 1886.

Charles Dudley Homans, M.D., of Boston, died at Bar Harbor, Me., September 2, 1886, aged sixty years.

John Lang Bennett, M.D., died at Wollaston, September 13, 1886, aged thirty-five.

Joseph Sampson Gamgee, F.R.S. Ed., M.M.S.S. Hon., died in Birmingham, Eng., September 18, 1886, aged fifty-eight.

John Sherman Emerson, M.D., died in Lynn, September 23, aged fifty-four.

Alley Talbot Wakefield, M.D., died in Cambridge, October 18, 1886, aged thirty-one.

Frank Albert Durgin, M.D., died in Salem, November 4, 1886, aged thirty-one.

Frederic Davis Brown, M.D., died in Webster, November 8, 1886, aged sixty-two.

Francis Patrick Scully, M.D., died in Portland, Me., November 12, 1886, aged thirty-four.

Luther Parks, M.D., died in Pau, France, November 19, 1886, aged sixty-three.

Josiah Sturtevant Hammond, M.D., died at Plympton, November 28, 1886, aged seventy-six.

Frederic Clinton Woodbury, M.D., died in Boston, December 4, 1886, aged twenty-five.

Willard William Codman, M.D., died in Boston, December 22, 1886.

MEDICAL NOTES.

— An important addition to the Topeka Insane Asylum, Kansas, has just been completed. It is a hall for dramatic, musical and other entertainments, is 80 by 50 feet, has a stage and accessories, is well

lighted and ventilated, and will seat six hundred persons. It was appropriately dedicated December 11th.

NEW YORK.

— At a meeting of the Board of Health, held December 23d, Dr. Day, Sanitary Superintendent, made a report in regard to the investigation of a complaint recently received by the Board from a resident of one of the uptown streets, in which the New York Steam Heating Company have been making excavations for a trench in which to lay its pipes. In the complaint it was stated that the exhalations from the excavations were offensive and injurious to health, and that in some places the gas-pipes had been injured, and gas allowed to escape. Dr. Day reported that he had inspected the locality named, and that the work, which was still unfinished, had been commenced as long ago as November 15th, and that since that time members of three families in the neighborhood had suffered from malarial symptoms sufficiently severe to require medical attendance. In consequence, Dr. Day made a recommendation that in the future the Steam Heating Company should be required to disinfect the earth as it is thrown out from the trench, and this was adopted by the Board.

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 18, 1886.

Cities.	Estimated Population.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Measles.	Diph. & Croup.	Typhoid Fever.
New York	1,439,039	795	341	25.35	13.91	8.45	10.40	1.04
Philadelphia	971,363	419	123	9.60	18.96	.48	2.40	1.92
Brooklyn	690,000	312	134	23.68	14.08	3.52	10.56	2.56
Chicago	630,000	—	—	—	—	—	—	—
Boston	390,406	202	59	10.89	17.91	.50	6.44	.99
St. Louis	400,000	—	—	—	—	—	—	—
Baltimore	417,220	169	49	19.75	19.16	—	6.49	2.95
Cincinnati	325,000	142	70	24.14	9.23	15.62	2.84	3.55
New Orleans	238,000	131	21	9.12	15.20	—	3.80	.76
Buffalo	202,818	—	—	—	—	—	—	—
District of Columbia	205,000	65	18	7.69	15.38	—	1.54	6.16
Pittsburgh	190,000	91	49	38.52	5.45	6.54	16.35	3.27
Milwaukee	142,400	—	—	—	—	—	—	—
Providence	118,070	—	—	—	—	—	—	—
New Haven	78,000	—	—	—	—	—	—	—
Nashville	60,000	28	15	28.56	14.28	24.99	—	—
Charleston	60,145	44	15	6.81	11.35	—	—	—
Worcester	68,383	20	7	50.00	20.00	—	5.00	—
Lowell	64,051	32	9	28.17	12.52	—	15.65	3.13
Cambridge	59,660	29	5	34.48	20.70	—	10.36	20.70
Fall River	56,863	22	7	13.66	9.11	—	—	4.55
Lynn	45,861	19	4	5.26	15.78	—	5.26	—
Lawrence	38,825	12	7	8.33	8.33	—	8.33	—
Springfield	37,577	13	5	15.38	7.69	—	—	—
New Bedford	33,393	9	2	22.22	11.11	—	—	22.22
Somerville	29,992	—	—	—	—	—	—	—
Salem	28,084	9	1	—	22.22	—	—	—
Holyoke	27,894	—	—	—	—	—	—	—
Chelsea	25,709	5	0	20.00	20.00	20.00	—	—
Taunton	23,674	5	0		—	—	—	—
Haverhill	21,795	5	2	20.00	—	20.00	—	—
Gloucester	21,713	7	2	14.28	—	—	14.28	—
Brockton	20,783	2	1	50.00	50.00	—	50.00	—
Newton	19,759	7	1	—	14.28	—	—	—
Malden	16,407	3	0	—	—	—	—	—
Fitchburg	15,375	—	—	—	—	—	—	—
Waltham	14,609	2	0	—	—	—	—	—
Newburyport	13,716	5	1	—	40.00	—	—	—
Northampton	12,896	4	0	25.00	—	—	—	—
Massachusetts Towns	—	—	—	—	—	—	—	—

Deaths reported 2,507: under five years of age 958; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 462, consumption 398, lung diseases 374, diphtheria and croup 186, measles 114, typhoid fever 57, diarrhœal diseases 44, malarial fevers 15, scarlet fever 12, cerebro-spinal meningitis 11, whooping-cough 10, erysipelas nine, puerperal fever four. From diarrhœal diseases, New York 21, New Orleans four, Brooklyn, Boston, and Baltimore three each, Cincinnati, Charleston and Lowell two each, Nashville, Fall River, Springfield and Northampton one each. From malarial fever, Brooklyn six, New York four, Baltimore and New Orleans two each, Charleston one. From scarlet fever, Brooklyn six, New York five, Pittsburgh one. From cerebro-spinal meningitis, New York six, Baltimore two, Cincinnati, Lowell and Springfield one each. From whooping-cough, Brooklyn four, New York and Boston two each, Pittsburgh and Cambridge one each. From erysipelas, Brooklyn and New York three each, Pittsburgh two, Fall River one. From puerperal fever, Baltimore two, New York and Boston one each. Pittsburgh reports one case of small-pox.

In the 22 cities and greater towns of Massachusetts with a population of 970,769 (population of the State 1,941,465) the total death-rate for the week was 21.05 against 23.05 and 18.14 for the previous two weeks.

In the 28 greater towns of England and Wales, with an estimated population of 9,093,817, for the week ending December 4th the death-rate was 21.0. Deaths reported 3,052: infants under one year of age 817; measles 134, scarlet fever 70, whooping-cough 61, diarrhœal diseases 46, fever 36, diphtheria 32.

The death-rates ranged from 14.3 in Brighton to 32.1 in Oldham; Birkenhead 14.2; Birmingham 17.5; Bradford 20.2; Halifax 23.3; Hull 21.8; Leeds 26.0; Leicester 18.3; Liverpool 22.5; London 20.3; Manchester 26.6; Nottingham 16.5; Sheffield 18.1.

In Edinburgh 21.3; Glasgow 27.4; Dublin 28.1.

For the week ending November 4th, in the Swiss towns, there were 32 deaths from consumption, lung diseases 16, diarrhœal diseases nine, diphtheria and croup four, scarlet fever three, measles, erysipelas and typhoid fever each two, whooping-cough one.

The death-rates were: at Zurich 13.4; Geneva 17.2; Basle 18.5; Berne 31.0.

The meteorological record for the week ending December 18, in Boston, was as follows, according to observations furnished by Sergeant O. B. Cole of the United States Signal Corps: —

Week ending Saturday, Dec. 18, 1886.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	7.00 A. M.	3.00 P. M.	11.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...12	30.138	40.0	42.0	37.0	84.0	91.0	83.0	86.0	N.E.	N.E.	N.E.	10	18	23	O.	O.	O.	—	—
Monday,...13	29.569	33.0	40.0	30 0	90.0	95.0	90.0	92.0	N.E.	N.	W.	16	10	3	R.	R.	O.	—	—
Tuesday,..14	29.551	35.0	41.0	29.0	76.0	53.0	57.0	62.0	W.	N.W.	W.	13	16	10	O.	C.	F.	—	—
Wednes... 15	29.652	35.0	46.0	27.0	81.0	68.0	82.0	77.0	S.	W.	N.	4	6	20	O.	O.	T.	—	—
Thursday, 16	29.715	14.0	29.0	12.0	89.0	100.0	64.0	84.0	N.	N.W.	W.	16	24	12	N.	N.	C.	—	—
Friday, ...17	30.292	20.0	26.0	10.0	67.0	56.0	57.0	60.0	W.	S.W.	W.	17	12	10	C.	C.	O.	—	—
Saturday, .18	29.988	38.0	46.0	15.0	78.0	92.0	100.0	90.0	S.W.	S.	S.W.	6	5	12	O.	R.	R.	39	.98
Mean, the Week.	29.844	30.7	39.0	23.0				78.7											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 18, 1886, TO DECEMBER 24, 1886.

FORWOOD, W. H., major and surgeon. Granted leave of absence for one month. S. O. 129, Department of Dakota, December 16, 1886.

LAUDERDALE, J. V., captain and assistant surgeon. Ordered from Fort Concho to Fort Clark, Tex. S. O. 174, Department of Texas, December 16, 1886.

EVERTS, EDWARD, first lieutenant and assistant surgeon. Ordered from Fort Grant to Fort Apache.

MASON, CHAS. F., first lieutenant and assistant surgeon. Ordered from Fort Huachuca to Fort McDowell.

BANISTER, W. B., first lieutenant and assistant surgeon. Ordered from Fort Wingate to Fort Lowell.

DIETZ, W. D., first lieutenant and assistant surgeon. Ordered from Fort Stanton to Fort Bayard. S. O. 136, Department of Arizona, December 16, 1886.

POLHUMUS, A. S., first lieutenant and assistant surgeon. Ordered for duty as post-surgeon at Fort Gaston, Cal., relieving

RAYMOND, H. L., first lieutenant and assistant surgeon. Ordered for duty at Angel Island, Cal. S. O. 123, Department of California, December 13, 1886.

ANDERSON, C. L. G., first lieutenant and assistant surgeon. Assigned, temporarily, to duty at Whipple Barracks, Ariz. S. O. 132, Department of Arizona, December 7, 1886.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE FOR THE THREE WEEKS ENDING DECEMBER 18, 1886.

BANKS, C. E., passed assistant surgeon. Granted leave of absence for twelve days, December 16, 1886.

CARRINGTON, P. M., assistant surgeon. Granted leave of absence for fifteen days, December 6, 1886.

WILLIAMS, L. L., assistant surgeon. Upon expiration of leave, to proceed to Boston, Mass., for duty, December 17, 1886.

SOCIETY NOTICES.

AMERICAN RHINOLOGICAL ASSOCIATION. — The American Rhinological Association would be pleased to have authors send any monographs, papers, or books, treating of any disease pertaining to the nose, throat or ears, to the librarian, Dr. N. R. Gordon, Springfield, Ill. Due acknowledgment will be made by the Association.

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION.— There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, January 5th, at eight o'clock. Communications: Dr. George W. Gay will report a "Case of Cystitis in a Female, relieved by an Unusual Operation." Dr. F. B. Harrington will report a "Case of Hæmospermatism." Dr. M. H. Richardson will read some "Notes on the Surgical Anatomy of the Œsophagus." GEORGE H. MONKS, M.D., *Secretary*.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting of the Boston Society for Medical Observation will be held at the Medical Library, 19 Boylston Place, on Monday evening, January 3d, 1887, at eight o'clock. Readers: Dr. C. P. Putnam, "The Feeding of Children." Dr. C. P. Strong, "Amenorrhœa treated by Permanganate of Potash, Clinically Considered." CHARLES P. STRONG, *Secretary*.

APPOINTMENT.

Dr. Charles F. Withington has been appointed Physician to out-patients in the Boston City Hospital.

DEATH.

Died, in Boston, December 22d, 1886, Willard William Codman, M.D., M.M.S.S.

BOOKS AND PAMPHLETS RECEIVED.

Indian Club Swinging. By an Amateur. Printed, Published and Sold by E. L. Freeman & Co. Providence, R. I. 1886.

Massachusetts Institute of Technology. President's Report, December 8, 1886. Boston: Rand, Avery & Co. 1886.

Fifth Biennial Report of the Board of Trustees of the State Charitable Institutions of the State of Kansas, for the Two Years ending June 30, 1886. Topeka. 1886.

Manual of Operative Surgery. By Joseph D. Bryant, M.D., Professor of Anatomy and Clinical Surgery, Bellevue Medical College, etc. With 800 illustrations. New York: D. Appleton & Co. 1887.

Diseases of the Blood and Nutrition, and Infectious Diseases: being Vol. IV. of "A Handbook of Practical Medicine," by Dr. Hermann Eichhorst, and Vol. XII of Wood's Library for 1886. Illustrated. New York: William Wood & Co.

Ueber die Indicationen chirurgischer Eingriffe bei internen Krankheiten. Von Dr. M. Heitler, Docent an der k. k. Universität in Wien. Separat-Abdruck aus dem "Centralblatt für die gesammte Therapie." Wien. 1886.

The Methods and Practical Results of Treatment of the Malarial Diseases now prevalent in New England. Fiske Fund Prize Dissertation, No. XXXV. By Charles V. Chapin, M.D., Providence, R.I. Providence, 1886.

On Certain Mooted Points in Gynæcology. Read in the Section of Obstetric Medicine at the Annual Meeting of the British Medical Association in Brighton. By Thomas Addis Emmet, M.D., Surgeon to the Woman's Hospital of the State of New York. London. 1886. (Reprint.)

New and Altered Forms of Disease, due to the Advance of Civilization in the last Half Century. Fiske Fund Prize Dissertation, No. XXXVI. By Hobart Amory Hare, M.D. (University of Pennsylvania), B.Sc., Demonstrator of Experimental Therapeutics and Instructor in Physical Diagnosis in the University of Pennsylvania; Physician to the Children's Dispensary of the University Hospital and to St. Clement's Dispensary. Philadelphia. 1886.

A Text-Book of Medicine for Students and Practitioners. By Dr. Adolf Strümpell, formerly Professor and Director of the Medical Policlinic at the University of Leipsic. Translated by permission from the Second and Third German Editions by Herman F Vickery, A.B., M.D., and Philip Combs Knapp, A.M., M.D. With Editorial Notes by Frederick C. Shattuck, A.M., M.D., Visiting Physician to the Massachusetts General Hospital, etc. With 111 Illustrations. New York: D. Appleton & Co. 1887.